THE

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and

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To sit under our own vine and fig tree, with no one to make us afraid, is the most ancient and sacred idea of a life of security, contentment and peace. In a national sense, we think we may begin to lay claim to this species of comfort, so largely prized by our ancestors of the patriarchal ages. The southern states have long boasted their groves and gardens of fig trees; and there is no longer any doubt regarding the fact, that the valley of the Ohio, with its vine-clad hills, will soon afford a resting place for millions of cultivators, who may sit down beneath the shadow of their own vines, with none to make them afraid.

There has been so much "stuff," of all descriptions, made in various parts of the country under the name of domestic wine—ninety-nine hundreths of which is not half so good or so wholesome as poor cider—that most persons whose palates are accustomed to the fine products of France, Spain or Madeira, have, after tasting of the compounds alluded to, concluded that it was either a poor piece of patriotism, or a bad joke,—this trying to swallow American wine.

On the other hand, various enterprising Frenchmen, observing that the climate of a large part of the Union ripened peaches and other fruits better than that of their own country, naturally concluded that if they brought over the right kinds of French wine grapes, wine must be produced here as good as that made at home. Yet, though the experiment has been tried again and again by practical vignerons, who know the mysteries of cultivation, and wine merchants who had an abundance of capital at their command, there is no record of one single case of even tolerable success. In no part of the United States is the climate adapted to the vineyard culture of the foreign grape.

So much as this was learned, indeed, twenty years ago. But was the matter to be given up in this manner? Could it be possible that a vast continent, over which from one end to the other, the wild grape grows in such abundance that the Northmen, who were perhaps the first discoverers, gave it the beautiful name of VINLAND, should never be the land of vineyards? There were at least two men who still believed wine-making possible; and who, twenty years or more ago, noticing that the foreign grape proved worthless in this country, had faith in the good qualities of the indigenous stock.

We mean, of course, Major ADLUM, of the District of Columbia, and NICHOLAS LONGWORTH, Esq., of Ohio. Both these gentlemen, after testing the foreign grape, aban-

doned it, and took up the most promising native sorts; and both at last settled upon the *Catawba*, as the only wine grape, yet known, worthy of cultivation in America.

Major ADLUM planted a vineyard, and made some wine, which we tasted. It was of only tolerable quality; but it proved that good wine can be made of native grapes, the growth of our own soil. And though ADLUM was not a thorough cultivator, he published a volume on the culture of native grapes, which roused public attention to the subject. He made the assertion before he died, that in introducing the Catawba grape to public attention, he had done more for the benefit of the country than if he had paid off our then existing national debt. And to this sentiment there are many in the western states who are ready now to subscribe heartily.

Mr. LONGWORTH is a man of different stamp. With abundant capital, a great deal of patriotism, and a large love of the culture of the soil, he adds an especial talent for overcoming obstacles, and great pertinacity in carrying his point. What he cannot do himself, he very well knows how to find other persons capable of doing. Hence he pursued quite the opposite system from those who undertook the naturalization of the foreign grape. He advertised for native grapes of any and every sort, planted all and tested all; and at last, he too has come to the conclusion that the Catawba is the wine grape of America.

"What sort of wine does the Catawba make?" inquires some of our readers, who like nothing but Madeira and Sherry; "and what do you think will be the moral effect of making an abundance of cheap wine?" asks some ultra temperance friend and reader. We will try to answer both of these questions.

The natural wine which the Catawba makes is a genuine hock —a wine so much like the ordinary wines of the Rhine, that we could put three of the former bottles among a dozen of the latter, and it would puzzle the nicest connoisseur to select them by either colour or flavor. In other words, the Catawba wine (made as it is on the Ohio, without adding either alcohol or sugar,) is a pleasant light hock,—a little stronger than Rhine wine, but still far lighter and purer than nineteen-twentieths of the wines that find their way to this country. Its subacid flavor renders it especially grateful, as a summer drink, in so hot a climate as ours; and the wholesomeness of the Rhine wine no one will deny.* Indeed, certain maladies, troublesome enough in other lands, are never known in hock countries; and though the taste for hock—like that for tomatoes—is an acquired one, it is none the less natural for that; any more than *walking* is, which, so far as our observation goes, is not one of the things we come into the world with, like seeing and hearing.

As to the temperance view of this matter of wine-making, we think a very little familiarity with the state of the case will settle this point. Indeed, we are inclined to adopt the views of Dr. FLAGG, of Cincinnati. "The temperance cause is rapidly preparing public sentiment for the introduction of pure American wine. So long as public taste remains vitiated by the use of malt and alcoholic drinks, it will be impossible to introduce light pleasant wine, except to a very limited extent; but just in proportion as strong drinks are abandoned, a more wholesome one will be substituted. Instead of paying millions to foreigners for deleterious drinks, let us produce from our own hillsides a wholesome beverage, that will be within reach of us all—the poor as well as the rich."

Very few of the friends of temperance are perhaps aware of two facts. First, that *pure* light wines, such as the Catawba of this country, and the Hock and Clarets of Europe,

* Mr. LONGWORTH is now making large quantities of sparkling Catawba wine, of excellent quality—perhaps more nearly resembling sparkling hock than Champagne.

contain so little alcohol (only 7 or 8 per ct.,) that they are not intoxicating unless drank in a most inordinate manner, to which, from the quantity required, there is no temptation. On the other hand, they exhilerate the spirits, and act in a salutary manner on the respiratory organs. We do not mean to say that men could not live and breathe just as well, if there were no such thing as wine known; but that since the time of Noah, men will not be contented with merely living and breathing; and it is therefore better to provide them with proper and wholesome food and drink, than to put improper aliments within their reach.

Second, that it is universally admitted that in all countries where light wines so abound that the peasant or working-man may have his pint of light wine per day, drunkenness is a thing unknown. On the other hand, in all countries which do not produce claret, hock, or some other wholesome light wine, ardent spirits are used, and drunkenness is the invariable result. As there is no nation in the world where only cold water is drank, (unless opium is used,) and since large bodies of men will live in cities, instead of forests and pastures, there is not likely to be such a nation, let us choose whether it is better to have national temperance with light wines, or national intemperance with ardent spirits. The question resolves itself into that narrow compass, at last.

As we think there are few who will hesitate which horn of the dilemma to choose, (especially, as an Irishman would say, "where one is no horn at all,") it is, we think, worth while to glance for a moment at the state of the vine culture in the valley of the Ohio.

We have before us a very interesting little pamphlet, full of practical details and suggestions on this subject.* It is understood to be from the pen of R. BUCHANAN, Esq., president of the Cincinnati Horticultural Society. It deals more with facts, actual experience, and observation, and less with speculation, supposition, and belief, than anything on this topic that has yet appeared in the United States. In other words, a man may take it, and plant a vineyard, and raise grapes with success. He may even make good wine; but no book can wholly teach this latter art, which must come by the use of one's eyes and hands in the business itself.

Among other interesting facts, which we glean from this pamphlet, are the following: The number of acres in vineyard culture, within twenty miles of Cincinnati, is *seven hundred and forty-three.* Those belong to 264 proprietors and tenants. Mr. LONGWORTH owns 122 acres, cultivated by 27 tenants.

The average product per acre in 1848 (a good season,) was 300 gallons to the acre. In 1849 (the worst year ever known,) it was 100 gallons. One vineyard of two acres, (that of Mr. RENTZ,) has yielded 1300 gallons in a season. New Catawba wine, *at the press*, brings 75 cents a gallon. When ready for sale, it readily commands about $1.25 per gallon.

The best vineyard soil on the Ohio, as in the old world, is one abounding with *lime.* A "dry calcareous loam" is the favorite soil near Cincinnati. This is well drained and trenched, two or three feet deep, before planting the vines; trenching being considered indispensable, and being an important part of the expense. The vines, one year old, may be had for $6 per 100, and are usually planted three by six feet apart—about 2,420 vines to the acre. They are trained to single poles or stakes, in the simple mode common in most wine countries; and the product of the Catawba per acre is considerably more than that of the wine grape in France.

Mr. BUCHANAN gives us a number of cal-

* *A Treatise on Grape Culture in Vineyards in the vicinity of Cincinnati:* By a member of the Cincinnati Hort. Society. Sold by I. F. De Silver, Main-st., Cincinnati.

culations of the cost and profit of a vineyard on the Ohio, per acre. The following is the result of his various inquiries:

Cost of a vineyard per acre, say $250, interest per annum,	$15 00
Cost of attending, per acre,	60 00
Cost of making the wine,	25 00
	$100 00
Probable average annual product—200 gallons, at $1,	200 00
Supposed profit per acre,	$100 00

This, which we think a reasonable estimate, is certainly an encouraging one for the cultivator of the vine in the United States. The soil and climate for the Catawba grape are, however, not to be found over a large range of our country. It is only in the more favored portions of the middle and western states that this grape ripens well enough to produce good wine. But the district extends over a breadth of a thousand miles, and contains fertile land enough to supply all our people with pure and wholesome wine.

The grape is by no means free from enemies. Its most fatal one in this country, is the *rot*—a disease which attacks the fruit; and though very little known here, it is a very serious mischief on the Ohio. As yet, it baffles all inquiries; but a careful perusal of this pamphlet, joined to our own observations, leads us to believe that it is owing to rapid alternations of heat and cold, moisture and drouth, on the surface of the soil.

Mr. LONGWORTH states that the only vineyards about him, free from rot in certain unfavorable seasons, were those of two or three lazy tenants, who left the surface uncultivated, so that it became covered with a thick coat of grass and weeds. Not a rotten berry was to be seen; while in his own and other vineyards, the surface of which was neatly dressed, the disease was very prevalent.

The remedy, if we understand the force of this circumstance aright, is plainly *mulching* Instead of cultivating the soil all the season, cover it early in the spring with straw, litter, sea-weed, tan, or whatever else may be had. The cost of the *mulch* will not be more, in most cases, than the labor of dressing the land; and it will effectually prevent all necessity for the latter. At any rate, it is well worth trial, and two or three facts within our notice lead us to believe that it will prevent the rot effectually.

Taking it for granted, that the Catawba will give us good hock, and sparkling wine, another native variety that will produce excellent table claret is a desideratum. The Schuylkill Muscadel, or Cape Grape, is said to do this on the Ohio. We have not had an opportunity of tasting the wine made from this grape; but so many cultivators are now experimenting with seedlings, that we cannot doubt a variety capable of giving us excellent red wine will soon be brought to notice.

DESIGN FOR A SMALL INN.

BY J. W. WILD, ESQ.

THE picturesque cottage, shown in the FRONTISPIECE of this number, was originally designed for Loudon's Architectural Supplement, by Mr. WILD, an English architect. We copy it from that work (which is in very few hands in this country,) as affording a good hint for a picturesque cottage or gate-lodge, in a wooded or sylvan situation.

The plan shows a porch, *a;* lobby, *b;* kitchen or living room, *c;* parlor, *d*, with a bay, *o*, which may be separated in the winter season by a screen of glass, so as to form a small green-house; an open *veranda*, *e*, with seats; a staircase, *f*, over which there is a pigeon-house, and from which the sign is projected; *g*, is the back kitchen; *h*, the pan-

try; *i*, the dairy; *k*, water closet; *l*, open porch; *m*, cow-house.

The estimated cost of this building in England is £232 7s. 3d.; and it may be built in many parts of this country for less than $1000. The tower contributes much to its picturesqueness; and in certain localities, and for some purposes, it would be highly appropriate and picturesque; while in others it would have too much pretension. In cases where the latter objection would apply, by omitting the upper story of the tower, and finishing it like a gable in the main roof, a less picturesque but still pretty cottage would be the result.

J. W. WILD.

DESCRIPTION OF A HYGROMETER,

FOR REGULATING THE MOISTURE OF THE AIR IN CLOSED APARTMENTS.

MR. DOWNING—I send you herewith a wood cut of the hygrometer, about which you inquire, together with a description of it, originally furnished for the Journal of the Franklin Institute.

In a letter of Franklin, addressed to Edward Nairne, of London, a plan for a hygrometer is mentioned, which was afterwards made by Mr. Nairne, and is described in vol. iv, page 449, of Sparks' edition of Franklin's Works.

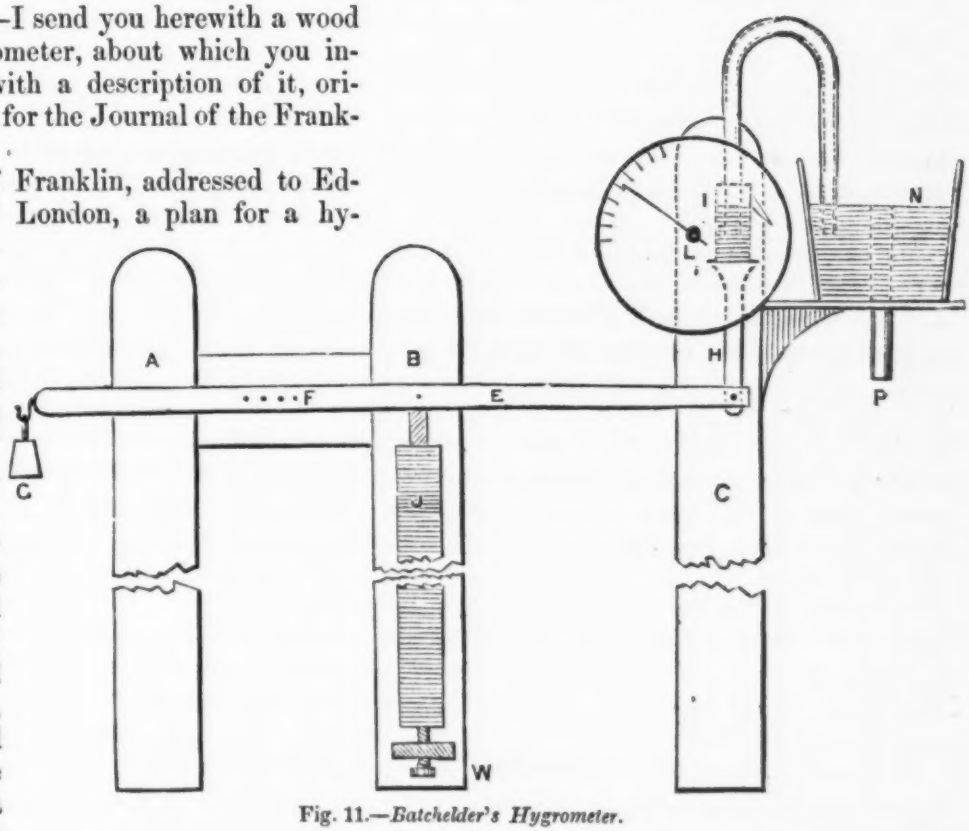


Fig. 11.—*Batchelder's Hygrometer.*

In this instrument the motive power is derived from a slip of wood, one end of which is fixed, and the other end attached to the short arm of a bent lever, which is moved by the expansion and contraction of the wood, the extent of the motion being shown upon a graduated arc at the extremity of the lever.

Having found that a hygrometer resembling this, which I have used for several years past, is very readily affected by changes of moisture, I have made one upon a similar plan, and attached to it an apparatus which will produce any required degree of moisture in the apartment in which it is placed. An instrument of this kind will not indicate the dew-point with accuracy, neither can two instruments be made to give precisely the same expansion or contraction when exposed to the action of the same degree of moisture; it is, therefore, of no value for observations that are to be recorded and compared with each other, but each instrument, when used in conservatories, or in any place where the temperature

is nearly uniform, will, if the air becomes too dry, restore it to that degree of moisture that has been previously determined upon as the most desirable.

In the annexed figure, A, B, and C, represent standards of wood which support the apparatus; E is a lever having its fulcrum at F. Upon the top of the perpendicular rod H, which rests upon the horizontal lever, a light open-mouthed vial or cup, I, is placed, having an orifice and lip at its side near the top; this contains about a gill of water, its weight and the weight of the long arm of the lever being balanced by the counterpoise G. J is a slip of bass wood, (Tilia Americana,) four feet in length, two inches in breadth, and one-eighth of an inch thick, the grain running in the direction of its breadth, or horizontally. This wood should be perfectly sound, of straight grain, but not of very close texture, its exterior being made rough by the use of coarse glass paper, in order to expose a larger surface to the air. At the bottom of the standard B, is a nut and adjusting screw, W, to which the slip of bass wood is attached; a plate of brass is screwed to the top of the wood, and is fastened by a pin to the lever E; from this lever a silk thread is carried around the pulley L, in a spiral groove; the axis of this pulley passes a dial plate and carries an index. At N is a vessel of water, having a proper supply pipe leading to it, the water being retained at a uniform level by the waste pipe *P*, and connected with the water in the small vessel I, by a syphon. The respective length of the legs of the syphon is immaterial, as the flow of the water depends upon the relative level of the surface of the water in the reservoir, and that in the cup; both legs being immersed, the syphon remains constantly filled with water.

To put the instrument in operation, let the apartment be kept at its mean temperature, and at the degree of moisture required, both of the vessels and the syphon being filled with water. After the instrument has been exposed to this atmosphere a short time, turn the screw at W until the orifice in the vessel I is level with the top of the waste pipe P; then turn the pully L, and set the index at zero. The instrument being thus adjusted, if the air becomes more dry the slip of wood contracts, the small cup descends, and water flows into it from the stationary reservoir; the water then escapes from the orifice in the side of the cup, falls into a funnel, and thence into a pipe, which, when the instrument is used in green-houses, conveys the water to evaporating pans placed upon the flues, or to a horizontal pipe, having openings at its upper surface at suitable intervals, from which the water falls at any point desired. As the water thus discharged evaporates, the surrounding air is moistened, the wood is expanded, and when it attains its original length, the orifice in the cup is again raised to the level of the surface of the water in the reservoir, and the flow of the water ceases. If, from any cause, the air should become too moist, the only effect produced is, that the cup continues to rise, and a small quantity of water flows back to the large reservoir.

If, by accident, the air should become very dry, the further contraction of the wood causes a larger quantity of water to issue from the cup than is due to this change in the hygrometric state of the air, the discharge being *accelerated* as the difference of level between the two surfaces increases; thus the return of the air towards its normal condition is the most rapid at the time when it is of the most importance that the moisture should be restored. The same degree of moisture may be made to discharge a greater or less quantity of water, by moving the fulcrum of the horizontal lever to the right or to the left.

The opening and closing of valves and stop-cocks is attended with much friction, but in this instrument, it will be observed that the water flows through the syphon with a very small amount of friction, and that little power is required to depress the cup. This plan may, therefore, be used to advantage in many instruments in which the motive power is small, the weight of the water discharged being applied to produce more extended or more forcible movements.

JOHN M. BACHELDER.

Boston, May 22, 1850.

ON RAISING PLANTS FROM CUTTINGS.*

BY M. NEUMANN, PARIS

No. XI. Cuttings by Pieces of the Trunk.—This mode of multiplication, which I first published seven years ago, is now in use in all countries. I employed, for the first time, Cycas circinalis, which was then rare in

Fig. 11.—*Section of the trunk of Cycas circinalis.*

green-houses. For this purpose I cut some slips, or slices, 1½ inches or 2 inches thick; I then left them freely exposed to heat for four or five days, to dry them; then I planted them in pots of suitable size, which I placed covered with a bell-glass, upon a hot-bed. These slices are not long before they emit roots, and show shoots between the scales; (fig. 11.) When all these were formed, I detached them, in order to make cuttings, which developed themselves as well as the plant which served to make the cuttings. I did not then doubt that, in dividing these slices of Cycas like the roots of Paulownia, I should obtain the same results; I then cut them into several pieces (*d c*, fig. 11,) each of which gave me a new plant. The head of the Cycas (*a*,) which I had cut to obtain the slices, was planted after having been exposed to the air of the stove for three weeks; I did not expect any result from it, because it was so young; but, in the following year, I perceived that this head had taken root, and it soon produced shoots which showed themselves in the same manner as the parts before cut. It is generally one year before these cuttings take root. Perhaps we shall be able some day to obtain plants of Cycas by striking the scales with which this plant is provided.

Peg Cuttings.—The easiest and simplest of all cuttings is known under the name of peg cutting; it is that generally used for multiplying trees which grow near water, such as Osiers, Poplars, &c. For this purpose we employ branches of a certain strength, and we cut the lower end to a point, as in fig. 12; we then force it into a hole in the ground previously made by a stake, or, which is preferable, into a hole larger than the cutting, and which we then fill with earth, pressing it down as soon as the cutting is put in its place. Everybody knows that cuttings root more easily in a light soil than in one too compact; it is for this reason that I advise this last method. I ought here to notice, among the Poplars, P. heterophylla and P. argentea, which take root from cuttings with difficulty. They are, therefore, better grafted on P. Caroliniana, to which they have more analogy.

Fig. 12.

Cuttings of the Trunk.—This species of propagation is the same as peg cuttings made with stronger branches; I mention it separately here, in order to call to mind that we may make cuttings of trees of considerable size, (fig. 13.) Anybody may have seen on the borders of rivers, where Willows are cultivated, the stems of such trees sharpened, and forced into the soil to keep together the beds; these Willows root freely, and often live for a long

Fig. 13.

* Continued from page 19.

time, although they may have been injured by the violence used in planting them. There is in the possession of M. Jacques, at Neuilly, a specimen of Sophora japonica which took root in this manner.

No. XII. Cuttings with a Heel.—This method, called cutting with a heel, is well known; it consists in carefully raising up a branch (see fig. 14,) in such a manner that the wood which unites it to the principal stem is detached with the cutting; this wood has the advantage of exciting the development of the roots. The branches which are thus cut ought to be two or three years old; the roots come out better from this wood than from one year old shoots. Such cuttings are made the length of three or four eyes, of which two or three are buried, and one is always left above ground.

Fig. 14.—*Heel-cutting of Gustavia augusta.*

Cuttings by Branches.—The evergreens which we cultivate in the open air may be multiplied by cuttings, if we choose the branches of the preceding year at the time when the sap begins to rise. The month of March seems to me the best for the climate of Paris. The Abies Deodara, which I introduced into France some years ago, and which resists the severity of our winters so well, may be multiplied perfectly by cuttings of its branches.

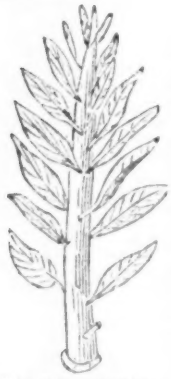


Fig. 15.—*Cutting of Columnea Lindeniana.*

The instrument with which the branch intended to be put into the earth is cut, ought to be so sharp that the wound presents no raggedness; it is usually cut rather a little below the petiole than above it; if this operation has been well performed, the base of the petiole ought to remain after the cutting, as is shown in fig. 15; the same branch cut into several portions, following the same plan, forms as many cuttings as there are pieces. The leaves which might hinder the planting of the cutting are cut at one-twentieth or one-sixteenth of an inch from the base of the petiole.

There are certain plants, as the Clusia, for example, whose leaves we do not cut off. Buds are often formed in the axils, which pierce the earth and develop themselves in the air. It has been said, and some persons still say, that such cuttings never form fine trees; this idea seems to me erroneous, and, in defence of what I say, I shall quote the examples of Araucaria excelsa and Cunninghami, which, raised from cuttings, cannot be distinguished from plants raised from seeds; Poplars, Abies lanceolata, &c., are in the same case.

It is not, however, an indifferent matter, whether such or such a branch is taken for striking; there are some trees which, when lateral branches are operated on, only give lateral branches, and never form a head; such are Araucarias, Abies, Proteas, some species of Leguminous and other trees; but if we detach the head of these plants to make a cutting, we obtain a plant in every respect similar to that produced from a seed of the same species.

However there are some species of trees whose cuttings made from lateral branches will produce, under the callus, when arrived at a certain strength, a true shoot which will not be long in showing itself, and will one day form a plant having the same appearance as that which a cutting made from the head would have produced. Physiology teaches us that the callus which is formed at the base of a cutting is nothing more than a successive collection of a multitude of small bladders or nipples, which are white when they are formed under the earth, and take their proper green colour as soon as they are exposed to the light: these bladders are easily seen by the naked eye.

When they are sufficiently collected to give birth to a new being, the bud then developes itself, and the tree begins to grow; such is the effect which is remarked in the cuttings of Abies lanceolata, Ginko biloba, and many others.

Fig. 16.—*Cutting of Abies lanceolata.*

Fig. 16 gives an idea of this phenome-

non; *d* is a lateral branch struck from a cutting, *e* is the callus, *c* a branch sprung from an adventitious bud and destined to become a tree which, to be well formed, ought to be produced upon the cellular matter of the callus and not upon the stem of the cutting; this last ought to be cut the moment that the shoot which it has brought to light is a little developed.

Some years ago I was advised to put a lateral branch of Araucaria excelsa into the ground; I was told that I should obtain along this branch adventitious buds which would form heads; I tried it, and never obtained a satisfactory result, nor have I ever been able to find at any horticulturists a single fact in defence of the speculation.

CRITIQUE ON THE JUNE HORTICULTURIST.

BY JEFFREYS, NEW-YORK.

YOUR LEADER.—*Our Country Villages.*—All very well, and rightly said—the Massachusetts part, in particular. They *do* understand things better there, as a state, in the way of living clean and comfortable about their houses and grounds, than in any other state of the union. From Pittsfield to Nahant, in its entire length, or from Northfield down the Connecticut valley to Long Meadow, in its full breadth, and through all its river courses, from the Housatonic in the west to the Merrimack in the east, are the loveliest villages that live, and though barren, hard and rugged be the soil of Massachusetts, "it is a land of beauty and of grandeur"—beautiful in its soft, sunny spots of cultivation and embellishments—grand in its mountains, rivers, valleys, capes, and ocean. But your *regular* villages! they are *not* in Massachusetts. In all their beauty throughout the state—I mean the old ones, for they are by far the prettiest—those ancient villages are laid out on the cow-path system of pilgrim times; no parks, but a "green;" a wimpling brook or a babbling river, with broad elms and willows clustered over its silvery bed, to screen it from the fierce glare of the sun; a stretch of luxuriant meadow; a gentle hill or a rocky ledge now and then upon its outskirts; mountains in the distance; in its heart the neatest churches and school houses; and spreading out upon its winding streets, the sweetest homes, the fairest lawns, the choicest gardens, and the grandest trees in the universe! Witness Stockbridge, Northampton, Lancaster, and a hundred others, to say nothing of the delicious places round about Boston; which, by the way, are losing half their beauty and rurality in the starch and maccaroni atmosphere which the city emigration has brought into them. Why, if you want to know the superiority of such winding streets, just recollect back a few years ago, when we were boys, and bring to mind the pleasant old roads crooking out in various ways from Greenwich-street, Broadway, and the Bowery, in this goodly city of Gotham, which threaded out all over the island, between old mossy stone walls, with wild-briar hedges overgrown; ledges of high rock; the occasional market garden, and low porched cottage enclosed; and now and then the hospitable looking, broad-porched old mansion of the Stuyvesants, the Gracies, the Rays, the Schermerhorns, or the Le Roys, with their long avenues of horse chestnuts, and elms, and English cherries, and box, and arbor vitæ. And now where are they? Gone, alas, forever, but that was country—rural; one could smell it, and feel it, as he coursed, or drove, or walked those pleasant lanes and bye-roads. And such, among such lands elsewhere, should

be country residences now. I have known a man to spend a thousand dollars in blasting away a great cluster of rock, and turning off a delicious and chrystal brook from his lawn, where the same rock and the same brook, with ten dollars worth of vines and shrubbery planted about them, were worth, in rural effect, all the frippery put together, which he had built there at an expense of ten thousand. Strange that people going into the country for a summer's stay, can't be content with the country alone, but make themselves and all about them miserable, because in their foolish pride, they *will* take the city and its nonsense along with them! Why, my good friends, the very object of getting into the country at all, is to ruralize—to repose—to keep off the dust, and suffocation, and turmoil, and pestilence of the city—to pick the wild huckleberries and blackberries, and eat them in your bread and milk, and make pies and puddings of them; to feed your ducks and chickens, and enjoy your fruits and gardens; and better than all, to turn the children out into the lawn, or the paddock—to catch the pony and ride bare-back if they choose to, scampering boys and girls together over the pasture! Then let the governess be dismissed for a summer's visit to her own friends. She will be all the fresher and more elastic in spirit for the next winter's campaign with the young daughters, who, in their buoyant romping over the fields, will expand their chests and dilate their lungs—all the stouter for *Mesdames* Waltz-enwack and Polka-lair to exercise their ingenuity upon, in torturing and compressing them into the fashionable wasp dimension when they "come out." And if your summer retreat be in a farming neighborhood, turn the boys for a few weeks into the district school with the farmers' children. Let them play ball, trundle hoops, fly kites, run foot races, pitch quoits. Farmers' boys are usually smart at such play, and if yours should beat them in the games, 'twould be a trophy in their caps. Let them swim in the river too, fish for dace and chubs in the brook, or bob for eels in the mill-pond. All these will do your boys no harm—even if in wrestling with the other youngsters they tear their jackets, and dirty their faces in their rough play. Ten to one, these same tow-headed farmers' boys will one day sail your ships, be the partners of your sons in business, or mayhap, marry your daughters, and you like them all the better that their wholesome stamina was acquired in the pure air of a country life.

Aye, and put yourselves at once on good terms with your quiet country neighbors. Although they be plain people, they possess kind hearts and many virtues, and will do you many a good turn; and as you treat them, will you, in their estimation, be "the best kind of city folks," or mere "stick-ups." How many pleasant, social afternoon and evening visits do sensible people in their summer sojournings make among their farmer neighbors, who impart, in their own way, quite as much instruction and pleasure as is given in return by those who profess to be better informed! And again, I have known even very good sort of city folks, when *in* the city, wonderfully fretted at the rudeness of their country neighbors, because they would not at first sight submit to their own arrogant pretensions of a higher gentility, and in their intercourse acknowledge a superior *caste* in their new neighbors, which they were utter strangers to, and had, most properly, never been taught to admire; thus making themselves wretched because of a sheer misunderstanding of human nature.

But the age of poetry is gone, and I suppose with the new fashions and the rail-roads, we are hereafter to have, in the new city-villages which are to be built upon them for summer resort, rectangular streets, and fancy hou-

ses stuck up like the "four and twenty fiddlers all in a row," on fifty-foot lots, as you say, and looking for all the world as nice and uniform as a shop-keeper's shelves with their shining wares so spruce and gingerly upon them. Well, I suppose the people like it, and there is no other way but to let them suffer—for enjoy them they cannot; that is altogether out of the question; and as some folks take a great deal of comfort in being miserable, why, let them do as they like. You may talk, my good sir—and I am glad to hear you—as long as you please, but such people don't read you; and if they did, three out of four could not understand what you meant.

Rough Notes from the West.—I hope Dr. KENNICOTT will preach a little good sense into the people on the subject of substituting good fruits for apothecary shops, as articles of diet. No subject will better bear handling.

As to your farmer schools, Dootor, you've got to hammer more tact into our farmers' heads than they have yet shown, either in legislation or election, before you'll work them up to a right understanding of their own interests. The demagogues and politicians have had it all their own way thus far, and so they are like to have it for a long while to come, unless *somebody* wakes up suddenly.

As to the "Bureau," Gen. TAYLOR has shown his proper estimate of the importance of intelligent agriculture, in proposing it, and Mr. EWING his correct appreciation of the true interests of the country in enforcing the measure, to Congress. But who supposes that the present Congress—the most fruitful in abortions yet seen—will do any thing for any interest beyond their own aggrandizement or the gratification of their own selfish objects? —No, answer.

A Letter to Ladies in Town.—

> "To thee, my FLOWER, whose breath was given
> By milder genii,"——

it may be unembarrassing that I am not a young man, persuasive and accomplished, instead of a gouty grandfather, merging into the "sear and yellow leaf;" for there would be a brisk chance of a proposal, and, in answer, most likely a—refusal, as soon after I could carry my spruce figure into New England, as etiquette would permit. But such contingency past, I can only express my pleasure to find one of the gentler sex—God bless them all! —"coming over to Macedonia to help us." The first music of the song-sparrow in spring, or the rich melody of the summer oriole, is not more welcome—and oh, how sweet *they* are!—than such heart-stirring notes in the Horticulturist. Write again, and often, my charming friend. Your auditory "is legion." And such a field no missionary—I speak it with reverence—this side the Caffree country, has for his gathering.

Coal Cinders for Pear Trees.—"Keep it before the people," as the politicians say. What is continually around us, is the last thing we see, or think of. Now here are not only hundreds but thousands of loads of cinders and ashes dumped daily into the rivers from our goodly city, as well as from most of the great towns all over the country, thrown away or buried, that would feed all the pear trees in cultivation, while thousands of dollars are annually spent to get rid of them, when but a trifle more expense would put them to excellent use. Do keep stirring up these every-day subjects, and show the public that the enriching material which they so expensively seek, is a perpetual nuisance under their feet and noses.

The Good Effects of Mulching.—I am going to tell you a story about mulching, by and by, if I live—provided present prospects don't blast before that time—that will enlighten somebody, and probably no one more than myself. I've tried an experiment in that way the past spring, which will settle the virtues of this doctrine most thoroughly.

Tan-bark for Mulching.—Any thing, Mr. CLEVELAND might as well have added. How many thousand loads of this invaluable material do we see daily rotting in unsightly heaps around the country, that would be worth a fortune if applied about the roots of all sorts of trees, shrubs, and a great many vegetables. To strawberries, tan-bark is the best mulching possible, for it keeps them moist and clean—two important requisites. I hope the the public will appreciate these valuable notes.

I thank Mr. C. for his kind sentiments toward myself; but as I have continued my idle remarks without the hope of applause or the dread of censure, I trust I may survive the peevishness of the discontented.

Design for a Gothic Country House, with an elevation and plan. As it is said to be but a step from the sublime to the ridiculous, so backward it is but a step from the ridiculous to the sensible. The house in *this* number is a good one—substantial, plain, dignified—very much so, in all three qualities.

I have said much about houses—perhaps too much; but as examples are placed before me, the spirit moves, and I must needs go on. And first, a few words in general. Iago said, "Men should be what they seem;" and why not houses? Our national propensity for imitation has led a great many builders not only of houses but of churches and other public structures, to copy the stout presentiment of baronial castles, halls, temples, and rotundas, as they exist in Europe, without the slightest conception of the absence of a corresponding fitness of things or circumstances in our own country to meet such structures. If we have the immediate means to erect them, we cannot transmit the hereditary wealth to perpetuate and maintain them in our posterity; nor, if so, have we the institutions which teach us to venerate and preserve them; nor a substantial public taste to approve them. Yet our vanity and ostentation urge us on to the tinsel counterfeit of what, in its original, is truly grand and magnificent, to attain the temporary possession of what, among those entitled to judge, must only render its builder and occupant, in such character, contemptible.

The nobility and hereditary aristocracy of Europe, with their immense landed estates, and numerous tenantry, from whose labors they draw an immense annual revenue, may, with great propriety—as they view things—indulge in the luxury of extended mansions, halls, or castles. Indeed, it is proper for them so to do. The soil of the realm is theirs—and they are, either by absolute right or courtesy, its legislators and masters. All the pomp and circumstance which they assume, they can and do maintain, as the same pomp and circumstance—according to the times—has been maintained through many centuries past, by their sires; and they can perpetuate it to their own descendants in like manner that it was perpetuated to themselves. All such is the law of the land. Things are not so here. The millionaire of to-day, two chances to one, is the son of a "nobody" of yesterday—of parents "poor, but honest," and whose only inheritance was their good counsel and their blessing. The wealth which he amasses, by the fortuitous chances of life, may be squandered or lost by his immediate descendants; or, by a remarkable vein of fortune, may be perpetuated with a due quantity of saving ancestral brain, to a generation or two beyond. But the castle building millionaire in America has no capital but his money, on which to figure in his new habitation. True, he may buy a large landed estate; he may squander a hundred thousand dollars, in filling his house with costly pictures, and statuary, and furniture; he may roll in his chariot, and be attended by his out-riders; and in the excess of his affected gentility, may "not dine till next day;" but he must do it

alone; or if not alone, he must surround himself with sycophants and parasites; for he can have no sympathy and companionship from the truly worthy among his countrymen on *such* pretense of mere wealth and ostentation alone. They tell a story of Davy Crockett, who represented a mountain district of Tennessee in Congress, during the Presidency of Gen. Jackson, that when he had returned, after the first session, to his constituents, at a log rolling, where Davy was present, a large number of his friends had assembled, who were curious to know something of life in Washington. Among other things, said Davy, "the common work-folks get their dinner about noon, as we do; the store-keepers eat about one or two o'clock; Congressmen and office-holders dine at three to four; the cabinet and foreign ministers dine at different hours—some at five, six or seven o'clock, as may be." "All very well," remarked his constituents, "but we want to know when OLD HICKORY gets his dinner." "Oh! that is altogether another thing," said Davy; "GENERAL JACKSON don't dine till next day!" The race of such a man is short. "Out, brief candle," is his history, so far as the "establishment" is concerned, and there is an end of his consequence.

It therefore befits an American citizen to build such a house as he can, if necessary, dispose of without great sacrifice, or that shall not distress his family after him to maintain it. The old adage, that "fools build palaces and wise men live in them," is as true now as when first uttered, and no where has the proverb been so repeatedly verified as in the neighborhood of our large American towns. The grand old homes of the English barons and squires were what they purported to be. There was "donjon keep and turret wall," as well as "moated court, and bower, and hall," a fitness of things to time, and place, and life, in the ruder times we so daintily affect to imitate in the building, altogether out of place and keeping with any thing which we have in the present day. The massive and imposing style of country residences of the olden time, is now absurdly mocked in our country in all sorts of ways. The stately old castle of unhammered stone, grey in weather-stained age, is counterfeited in its entire complexion, in modern brick, stucco, and paint; with inside furniture and trimmings to match. The substantial, hard-burnt, russet bricks of the olden time, are here imitated in wood, lath, and plaster; which, after three, four, or five years acquaintance with the weather, becomes as ragged and battered with the frosts and rains upon its sides as a sheep afflicted with the scab; and so on to the end of the chapter—a tawdry, untutored affectation of what one cannot reach, and what, if he could, would only make him more ridiculous.

The *plan* of the house in your frontispiece, is, in the main, a very good one, and may be made entirely so by trifling alteration. The entrance porch, however, is not a sufficiently prominent feature in the design—that always should stand out a chief feature in a country house—as a mark of welcome, of hospitality. It is, besides, too far from the centre of the elevation; it would appear better at the room A, and in such arrangement better accommodate the interior passage from the dining hall to the parlor—which, by the way, is not lighted at all—a great defect—unless it be from above. A passage should also be made from the inner passage or hall to the kitchen or servants' room, that the front door bell or knocker may be answered without going through the dining hall—a serious interruption when the family are at meals. There is one grand feature in this house that I admire—the huge outer chimney towering up the gable end from the dining hall. What a grand wide place for a blazing wood fire, at thanksgiving, or christmas, or wedding time, or any other social time, with a back-log and

fore-stick of good hickory or maple wood, driving, in its glowing heat, your guests and family into a wide circle round the room, and lighting it up with such a cheerful, welcome radiance, as will put modern gas and spermaceti out of countenance—no *smell* about it, but the delicious odor of the sweet exuding sap. Ah, my good sir, it is a very capital house!

But why so large a landed estate, and stone so very plenty, to permit such a house to one who wants it? I see no such great requirements in these particulars. Rough stones are cheap—unhammered they should be; and the house is certainly not a *very* large one—a *good* house, indeed, Mr. Downing. I wish some person would build one like it, with the alterations I have suggested. I would go a good way to see it.

Whitewashing.—The curculio again! the pestilent rascal! I hope some plan is to be ascertained among them all to stop their ravages. We'll wait a little longer, and see what this last cure will amount to.

Cream Hill Vindicated.—I feared as much. "A pretty free sort of a country this," said Teague, just after landing, "that a jintleman can't say and do what he plazes, without such a patter about his ears, and a threat of the bilboes." One thing we have gained, however. Cream Hill has produced both poetry and eloquence in its "vindication," and I trust the effort of its vindicator, at a description of its fair proportions, has not "wrenched" him so sadly as a "nothing" else might have done.

I thank your correspondent, however, most heartily, that in vindicating his favorite "hill," he has thus valiantly come up to my aid in illustrating the genus "Imitatii," through his signature "*Veritas*"—a name some thousand years or more in date, and applied by odd scores and more of pamphleteers and scribblers every year from the Romans down. No "imitation" in this, my good friend—none, whatever.

Thus, Mr. Editor, terminates my random scribblings on your now past volume of the Horticulturist. That I have profited any one, I may well doubt; that I have amused now and then a reader, is possible; and if I have done no harm, I shall be, at least, content. My pen will now take its rest in the quiet repose of my farm, and among the society of my peaceful, rustic neighbors. Whether its labors will again revisit your pages, is a question of little moment, I presume, with yourself or your readers. That, time and tide must determine.

JEFFREYS.

ON THE CULTURE OF GERANIUMS.

BY WM. CHORLTON, STATEN ISLAND.

THE Pelargonium (Geranium,) is not only one of the most splendid, but to the florist one of the most useful genera. So superb is the inflorescence of some, so unsurpassedly rich the scent, and so delicate and handsome the foliage of other kinds, that no collection of plants, however small, can be said to be complete without a due selection of this favorite of Flora. From the time of our great-grandmothers, it has been a justly popular plant. The old "Horse Shoe" and "Ivy Leaf," were once seen in every cottage window, and were looked upon as a part of the family by all, from the old grandmother, who put on her spectacles to watch its unfolding leaves, to the smallest child, who stood tiptoe on buf-

fet to peep into the window, and though the gorgeous flowers of the new hybridized varieties, have in a great measure driven these and many other old veterans nearly out of the field; yet all are deservedly admired. While too much praise cannot be given to such men as BECK, LYNE, THURTELL, GARTH, GAINES, and a few others, for their perseverance and ardor in bringing this genus to what is acknowledged, in a floricultural view to be perfection, yet it is much to be regretted that so many of the old and originally introduced species should have sunk into oblivion. There were in many of them forms as attractive, and colours equally brilliant as the new sorts; and though the flowers were not so large, the perfume of the leaves of many species amply compensated for this apparent deficiency. The florist, having now arrived at his own standard of perfection in this case, has become satiated, and looks around for fresh novelties upon which to try his skill; yet he cannot relinquish his old favorite, and he is now working at what he pleases to call a fancy class of Pelargoniums, several beautiful varieties of which are now before the public; but I am inclined to think, that in the long run he will again get into the same strain of flowers, for twenty years ago there were many varieties which are not unlike what he is now operating upon; and as form and brilliance are instinctive feelings with him, I see no chance of other results.

The geographical range of the genus may be said to be limited, being confined to the southern hemisphere, and, with a few exceptions, to the Cape of Good Hope, from which place have been brought upwards of two hundred species and sub-species. It belongs to the class Monadelphia, and forms the order Heptandria of the sexual, and to the order Geraniaceæ, of the natural system of botany. By authors, it is reduced into many subdivisions, owing to its multiplicity, for convenience in ascertaining distinctions, and referring more readily to individual species. In culture, the more herbaceous and succulent kinds, as *bicolor*, *tricolor*, *carnosum*, &c., require in winter a moderately warm temperature, say 50° by night, and 60° to 70° with sunlight. The more robust sorts, such as *Zonall*, the scarlet, and all the fine show kinds, will do well with less heat, although all of them do not like too much cold, and particularly sharp winds; but abundance of air should be given at every favorable opportunity. The whole family should be placed as near the glass as possible; without which precaution they will grow weak and sappy, and the blooming will be very much deteriorated. Where proper convenience cannot be had, the scarlets (such as Tom Thumb, etc.,) may be taken up about the middle of October, and the roots covered with sandy loam in a cool dry cellar, free from frost, and taken out in early spring before they have pushed much growth. If too soon to plant in the open ground, they must be put into pots in a cool room, where there is light, and seldom watered, only giving barely enough of that element to support life till the weather is sufficiently open, when they may be planted into the flower borders, and will soon recover and make a fine display all the summer. But where there is sufficient room in a greenhouse, if placed near the glass, they will continue to bloom all the winter, and amply repay for the room they occupy.

The culture of this genus is so simple that it is matter of surprise to me that we see so many ill grown and straggling specimens even, in some of our best places. It appears as if there were a determined intention to make the most lovely of Flora's gifts hideous. I am sure there is room for great improvement, and hope we shall see it. A well grown Pelargonium should not have its stems in sight,

but covered by its ample leaves over the pot edge; its height ought not to exceed the breadth, including the top of the bundles of flowers. A plant of this form is always pleasing, and certainly far preferable to the naked *scarecrows* we too often see.

The whole tribe may be propagated from cuttings, portions of the root, or seed. The most common method is by *cuttings or slips*, which should be performed as follows: When the plants have done flowering, cut them down so as to leave only three or four eyes of the present season's growth, and select for the cuttings any portions which are hard and woody. These may be cut into lengths of four joints each,—reserving the three upper leaves, but cutting away the lower ones. Then smooth off the lower part of the stem to just below the lower joint. Any shoots that have not flowered, and retain their crown of leaves, may also be cut in the same way and not topped. Choose as cool a place as possible, and shaded from the sun's rays, put into a frame placed there a few inches of sand or sandy loam, make it moderately firm, and insert the cuttings four inches apart, being careful not to put them deeper than the lower joint, or they will be subject to damp off. Give a moderate watering to settle the earth close about them, and leave the frame open till the leaves are dry, when put on the glass, and be careful to give air in close damp weather, particularly at night. When it is not requisite to propagate every portion of any variety, it is better to throw away the "cutting-down" branches, and wait till the plants have grown four or five joints. By this time the weather will be cooler; besides, the slips will be in a much better state for striking. In this case, thin out the superfluous shoots, place them in a frame as above, or in the hot-house, either singly, into three, or four, or five, into five-inch pots. In about three weeks, they will be sufficiently rooted when they may be planted out singly into four-inch pots if robust growers, but weak growers into smaller ones.

Propagation by roots may be performed by cutting the roots into pieces, from half an inch to three inches long, and planting them about an inch apart into pots or boxes, placing them in an oblique position, leaving that end cut from nearest to the stock level with the top of the soil, or very little below it. Put them in a gentle hot-bed, when they will soon begin to grow. The process is best performed early in the season, immediately before the plants begin to grow, as the roots then contain most organizable matter, and success is more certain. If performed through the summer months, the hot-bed may be dispensed with. This plan is most useful in propagating the more succulent and tender species. As some of them are rather impatient of the knife, and the cutting apt to rot, it is also serviceable in the other kinds when speedy increase is the object; but cuttings of the latter make better plants.

Propagation from Seed.—This method is practiced for the production of new varieties, and also to perpetuate the more tender and delicate species. In the former case, it is time thrown away unless due care is taken in impregnating the parents, which should be allowed to bloom in an apartment where no other of the same family is located, but the two plants between which the cross is desirable. Air should be freely given, or the embryo seeds will not swell or come to perfection. They may be sown as soon as ripe. When the first rough leaf is expanded, they may be potted off singly into three-inch pots; place them in the shade for a few days, and keep them in the house till they get strong enough to bear the open air. Remove into larger pots as occasion requires. They will flower the following season, when all that are worthless may be thrown out.

To cultivate the Pelargonium well in pots, a moderately rich soil is required. Take for the free growing kinds the top three inches, (grass included,) of a free loam pasture, mixed up with one-third well rotted horse or cow manure, and one-sixth rotted leaves, which have lain together twelve months. *Do not riddle or sift it*, but break the larger lumps with the back of the spade. When potting, after putting in the bottom of the pots an inch or two of crocks, lay some of the decayed turfy and lumpy parts, and fill up with the finer portion; by so doing, the superfluous water can drain away and prevent the soil from becoming *sodden*. For the weak and tender growing species, use equal portions of peat, leaf mould, fresh loam and sand. When the plants have done flowering, cut them down as above mentioned, place them in a shady place in the open air, and turn the pots on their sides for two or three days, only allowing sufficient moisture to sustain life. This will prevent bleeding, which sometimes takes place, and the escaping sap from running down the branches, which rots them. When they have grown an inch or two long, they may be turned out of the pots, and the old soil shaken from the roots, and all decayed parts cut away. Shorten-in the healthy roots a little, and re-pot in the same sized pot—using the above compost; but if much diseased reduce the size of the pot, and use fresh, turfy, free loam, without any manure until the plant again becomes healthy; replace them in the shade for eight or ten days, and place boards or other substitutes under the pots to prevent the ingress of worms; they may afterwards be placed in an open situation till about the middle of October, when they are to be removed into larger pots, which will serve for blooming in. If fine and abundant bloom is an object, never pot a Pelargonium in spring; the plant is thereby thrown into an undue luxuriant state, and the flowers small and few. I again repeat, avoid sharp winds, but admit air freely at every favorable opportunity; be careful of drip from the roof, and do not water overhead. Care in these points will help away the spot, which sometimes commits such ravages in this tribe. About the middle of February, examine all over, and thin out any superfluous or weak shoots, leaving four or five of the strongest. Provide a quantity of small stakes, and arrange them equidistant, according to the number of branches round the inner rim of the pot, slanting outwards; tie the shoots down, one to each stake; be careful that they do not break off at the base, as this is easily done. It is well to run the ties through to the opposite branch before bringing down, which will prevent the base of both opening too wide, when the head may be brought down as low as required without danger. Top the end of each, which will cause them to throw off side shoots and render the plants bushy. Nothing further is required but occasionally fumigating with tobacco when the green fly (Aphis) appears—careful watering, and tying the branches as growth proceeds. There is no occasion for a display of sticks, merely sufficient to prevent the plants from breaking down. When spring growth commences, occasionally (say once a week,) give a little weak solution of guano, (about one pound to twenty gallons water,) or liquid drainings from a dunghill. Where both are at hand, it is better to use each alternately. *Always use these liquid manures in a clear state;* for if muddy, they clog up the soil and prevent the air from percolating, thereby rendering the whole mass "sodden and sour." To ensure success, the plants must be kept near to the glass, have air abundantly supplied, and, when growing freely, they must never be allowed to droop for want of water. Without care in the latter case, the leaves will turn yellow, and the whole plant will present a

withered appearance. Remember that plants, and *particularly the Pelargonium*, are "tell tales" in this respect, and are sure to expose negligence. In this climate, with right management, these plants grow very vigorously, and are correspondingly succulent; and if the syringe is used too freely, "spot" and rot is the consequence. If the house is dry, and heated by brick flues, it is much better to damp the side walls and floor so as to produce a genial atmosphere. As far as my experience goes, I would say never use the syringe in this case. Although it is so essentially requisite for the Pelargonium when growing freely in England, observation teaches me differently here. When the plants begin to open their blooms, the under side of the glass should be coated over with a mixture of whiting and glue, which will readily wash off when required. This is better than canvass blinds, as they produce too much shade, and make the plants grow weak, and the blooms small and deficient in colour.

I cannot too much deprecate the common practice of huddling these plants altogether in a corner during the winter and spring months in small pots, and when the weather opens, turning such scrubby things into the flower borders, *in rich soil*, where they stand like a boy upon stilts, for a while, opening a few meagre flowers; and when the roots find their way out from their former cramped up abode, the tops grow with over-luxuriance, and if there is any bloom at all produced, it is small and scanty. If it is desirable to have them in the flower garden, turn out healthy plants with good roots into *very poor soil*, and mulch the top, and very different results will be obtained; but as most plant houses are thinned out about the time when they begin to flower, I see no reason why they may not be left inside where the flowers will expand in perfection; and what would otherwise be an empty space becomes an ornamental feature. Of course, this does not apply to the scarlets, or the strong growing, winter flowering roots.

CRITERION OF A PERFECT SHOW PELARGONIUM.—The plant should be of bushy habit, vigorous, but not rampant growth, and disposed to flower freely. The leaves, a glossy dark green, firm in substance, and well supported by the petiole. The flower stems strong, and sufficiently long to elevate the bundles of flowers above the foliage. The bunches should contain from five to nine flowers, of a thick velvety substance, bright and distinct in colour, the outline forming a perfect circle; the petals a little cupped, but not so much as to prevent free expansion, with a clear white bottom,—the two upper ones having a decided blotch of a brilliant maroon colour, showing a clear edge of the ground colour; the outer surface perfectly free from indentation or waviness. The fancy varieties may have the blotch over the whole of the top petals, or likewise in the centre of each of the lower ones, or merely a penciling. The ground colours tolerated in the former class are white, pink or rose, crimson, purple and scarlet; in the latter, brilliance and distinctness of any shade.

The annexed list contains a few of those most worthy of cultivation; and though some of them are not of the newest, they are nevertheless of the best quality. I may here mention that all the newest are not the best, though some of them are perfection itself:

White.

Alpha, (Walker's.)
Alexandrina.
Camilla, (Wilson's.)
Chaplet, (Lyne's.)
Enchantress, (Wilson's.)
Imogene, (Lyne's.)
Pearl, (Drury's.)
Queen of Sheba, (Wilson's.)
Witch, (Garth's.)

Pink or Light Rose.

Aerial, (Foster's.)
Amelia, (Hoyle's.)
Beauty of Clapham, (Saunder's.)
Constellation, (Garth's.)
Euclid, (Walker's.)
Hebe's Lip, (Beck's.)
King of Saxony, (Lyne's.)
Merry Monarch, (Lyne's.)
Modesty, (Lyne's.)
Sir I. Newton, (Wilson's.)

Rosy Red or Scarlet.

Alladin, (Lyne's.)
Augusta, (Hoyle's.)
Comte d'Orsay.
Duchess of Sutherland, (Gaines'.)
Duchess of Leicester, (Gaines'.)
Duke of Cornwall, (Lyne's.)
King of Saxony, (Gaines'.)
Mars, (Garth's.)
The Cid, (Foster's.)

Crimson.

Ackbar, (Gaines'.)
Ardens, (Foster's.)
British Hero, (Noyes'.)
Gigantic, (Hancock's.)
Mount Etna, (Hoyle s.)
Hybla, (Foster's.)
Mogul, (Gaines'.)
Pompey. (Hoyle's.)
Pluto, (Thurtell's.)
Crion.
Rising Sun, (Gaines'.)
Sunrise, (Lyne's.)
Standard of Perfection, (Nichols'.)

Purple.

Agrippina, (Cattleugh's.)
Conservative, (Garth's.)
Negress, (Garth's.)
Sir R. Peel, (Foster's.)
Sultan, (Garth's.)

Fancy.

Anais, (Foster's.)
Aurora, (Beck's.)
Beauty, (Foster's.)
Beauty of Walthamstow, (Pamplin's.)
Beaufort Chief.
Gipsey, (Foster's.)
John.
Jessie, (Foster's.)
Jewess, (Foster's.)
Lady Flora.
Oddity.
Painted Lady.
Sidonia.
Splenii.
Trafalgar.
Tricolor.
Unique.
Victoria.

I am yours, most respectfully,

WM. CHORLTON,

Gardener to J. C. Green, Esq., Staten Island.

FRUIT TREES FOR THE SOUTH.

BY W. A. WHITFIELD, SHELBY, MISS.

MR. EDITOR:—I hope I shall be pardoned in differing from the opinion of Dr. PHILIPS, of Edwards, respecting the adaptability of northern fruits to every portion of the south. JEFFREYS is right, so far as this region is concerned, and I should be tempted to tender him my thanks, but that I find myself in the condition of the Irishman who discovered the mud-hole himself. I feel confident that Dr. PHILIPS has not learned the result of various attempts to raise fine northern peaches in this vicinity. We have no use for the varieties mentioned in his article on page 493, including his favorite Elmira. Nature has given us an atmosphere in which no foreign peach tree ever yet tried has proved itself profitable. Along the gulf and lake region of Mississippi, within the last eight years, more than 30,000 dollars have been expended in procuring, planting and cultivating peach trees brought from northern states, and from the interior region of Mississippi—many from the immediate vicinity of Dr. PHILIPS himself, in the Vicksburg gardens—including 54 varieties, upon every kind of soil; clay, clay-loam, sand, sandy-loam, flint and ferruginous gravels, alluvial and primitive, new and old, poor and fertile, naturally so and made so by art, limed and unlimed, with the trees pruned and unpruned, cultivated and in grass—and all—all, without one solitary exception, have failed, utterly failed, to the no small discomfiture of those who had built castles in the air upon the proceeds of fine northern peaches sold in the neighboring market at six dollars per dozen. Thus, sir, the work of seven or eight years—trees mammoth in size, are being continually hewed down, to give place to the more profitable seedling of the country.

The history of all foreign* trees is the same. First year—If the tree has formed fruit buds before its removal, and has sufficient root with a favorable spring, it will mature tolerably well two, three or half a dozen peaches, well flavored and of medium size. Time of blooming, from middle of February till middle of March; makes extraordinary growth.

Second year—Blooms from six weeks to two months later—sets well, but without leaves to protect the fruits from the burning suns of May—it all drops off. I have seen a few hold on for two weeks after the time of ripening at Vicksburg—200 miles north of this—but what was there a fine, luscious peach, four inches in diameter, is here a miserable drivel, from the size of your thumb to an inch in diameter. We ought not to expect fruit here the middle of June, from trees which will not bloom until the first of May.

I believe, however, Mr. Editor, our coun-

* Foreign distinguished from creole.

try is well adapted to the growing of fine peaches. We only want the proper varieties. Where can we get them from? We must raise them from seed. We have the creole peach here—some well flavored and of good color, but Liliputian in size; with others large enough to please the eye of the giant of Brobdignag, but coarse and ill flavored. I should like very much, to get seeds from several northern orchards. I want choice seeds. I believe in like producing like. From whom can I get? I should like to procure cherry and plum stones, also.

One word about grape vines. I found no difficulty in grafting them early in the sprin . My plan is, to cut off in the winter, and cleft graft; or in very large stocks, I split only the bark of the stock, and sloping my graft, press it in, and secure with a small thread. If it bleeds, wrap all for a short distance with old cotton rags, above and below the wound; apply the wax quite warm, so as to make the whole air tight. One of my finest vines this year, was one from accident left without wax or ties. A second one has a fine bunch of grapes. Yours, very respectfully,

W. A. WHITFIELD.

Shelby, Bay of St. Louis, Miss., June 15, 1850.

NOTES ON CHERRIES.

I. REINE HORTENSE.—A French cherry, of considerable reputation, lately introduced into this country. It has fruited here this year, and is quite a distinct variety. It belongs to the Duke class of cherries, but ripens about the height of the cherry season. The flavor is slightly sub-acid, like the May Duke. This variety is remarkable for its long and slender stalk, (measuring a little more than $2\frac{1}{2}$ inches in length,) and the *oval* shape of the fruit. The skin is pale red and semi-transparent—the suture distinctly marked by a dark line, without any depression; the flesh tender, juicy, and of agreeable flavor; and the stone (unless the fruit is very ripe) adheres to the stalk. The pit is also of a long-oval figure. This variety will, we think, be more valuable at the west, from its hardiness, joined to other good qualities, than here, where all the other sorts flourish so well.

II. ROBERTS' RED HEART.—In our work on Fruits, we have not done justice to this cherry, which originated in Salem, Mass. It is remarkable for productiveness, for good flavor, and for uniformly bearing a good crop. The following is an accurate description of the fruit:

A heart cherry: fruit of medium size, and roundish heart shape; skin of a pale amber ground, but nearly overspread with pale red, mottled with deeper red, and with some pale amber specks. Suture quite distinct. Flesh white, juicy, sweet, and well flavored. Stalk long and slender, set in a depression of moderate depth. A very prolific bearer. Ripens last of June.

Fig. 17.—*Roberts' Red Heart.*

III. CHAMPAGNE.—A new variety, raised from seed by Mr. C. DOWNING, of Newburgh. It is a very distinct variety; and after waiting four years to satisfy ourselves of the constancy of its good qualities, we do not hesitate to say that it will prove one of the most valuable standard cherries. It is neither very large nor strikingly handsome; but it has the great

merits of being very hardy, a great and regular bearer, and of withstanding all the vicissitudes of rotting and blight, which destroy many fine cherries about the time of ripening. In flavor, the Champagne is peculiar,—neither quite sweet or sour, but that lively mingling of the two which suggested its name. It should be remarked, however, that the fruit is not ripe when it first appears so; but should be allowed to hang on the tree, (as it will without rotting,) until perfectly matured, when it is very sprightly and excellent; and is preferred by many who have tasted it to all other cherries.

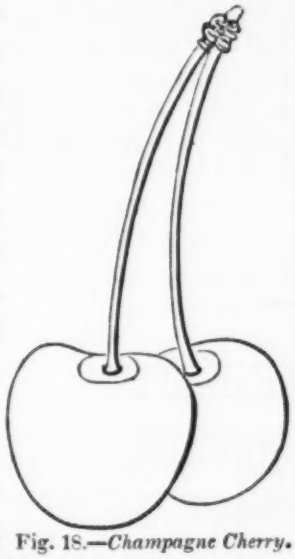


Fig. 18.—*Champagne Cherry.*

The Champagne cherry has the excellent habits, as regards health and productiveness, of Downer's Red; one of the best of cherries for general culture in the United States—probably because it originated in this country. In other words, while a person may have a tree of either Champagne or Downer's cherries, and be certain of a large crop of valuable fruit every season, he may not gather 50 cherries from a tree of many of the Heart or Bigarreau cherries per annum for many years,—either by reason of the frosts in spring, or damp weather at the time of ripening.

Fruit of medium size, roundish heart-shape, but always slightly angular or one-sided. Colour lively brick red, inclining to pink—a little paler on the shaded side. Stalk of moderate length and size, inserted in a rather flat, shallow depression. Flesh amber coloured, of a lively rich flavor—a mingling of sugar and acid—something between Downer's Late and a Duke cherry. A most abundant bearer, and ripens very uniformly, maturing about the 20th of June, and hanging a long while on the tree.

IV. Downing's Red Cheek.—This cherry, also raised in the establishment of our brother, some years ago, and described in our work on Fruits, proves to be one of the most beautiful and delicious of its class. It is far handsomer as well as more tender and sweet than the Bigarreau or Graffion, which it somewhat resembles; and it will, we think, supplant that variety, when its merits are more generally known.

A DESCRIPTION OF CRIST'S MOLE TRAP.

BY J. B., NAZARETH, PA.

This newly invented trap consists of a frame, composed of two uprights, *a a*, about 22 inches high, joined by a top board, *b*—the whole fastened on a foot or base *c C c*. *d* is a heavy piece of scantling or block, which by means of grooves is guided along the uprights up and down. In the lower part of the block are inserted a number of sharp steel pins, about seven inches long in the clear. In the part *C*, of the foot-board, is attached a small piece of thin board in the manner of a pedal of a piano forte, which, when the trap is set, crosses the passage of the mole. *f* is a wooden latch, suspended by a wire from the cross piece of the frame, and terminating with a wire hook, *g*, at the lower end, somewhat flattened. In the upper part of the latch is cut a notch or shoulder, (*i*,) as a rest for the pin block when the trap is set.

Set the trap lengthwise over the passage

draw the block up and fasten it by the wire hook, *k*, to prevent accident to the trapper;

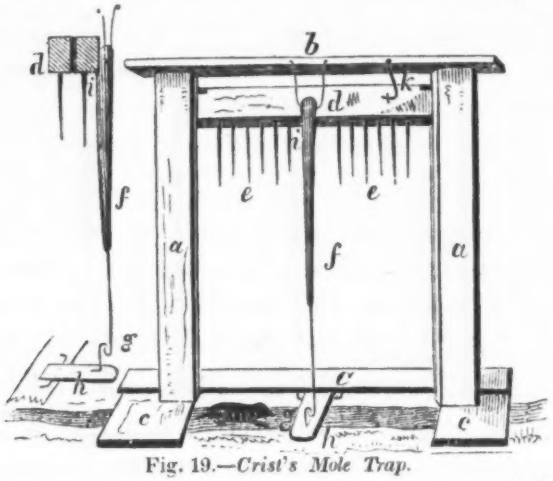


Fig. 19.—*Crist's Mole Trap.*

place the apparatus over the passage of the mole in such a manner that when the block falls it will come exactly in the middle of the passage. The ground under the trap in the passage should be taken out, and the bottom levelled, and the sides padded and made hard. The ground taken out should be freed from obstructions, and placed again loose in the passage; but before this is done, the block should be tried if it operates well, and falls right in the passage. Then hang the hook of the latch into a similar hook, projecting upwards from the pedal, so that they may separate upon the slightest touch, by the lifting of the ground on either side by the mole, which in an instant brings down the block and pierces the animal through. J. B.

Nazareth, Pa., June 21, 1850.

THE CALCEOLARIA—ITS VARIETIES AND CULTURE.

BY GEORGE GLENNY.*

[As this exceedingly pretty and unique genus is just beginning to attract general attention in the United States, we give the following article, from the best authority in England, regarding its culture. To those who cannot get plants, we may remark that numberless varieties of Calceolarias may be raised from a single paper of the seeds, now to be had of the principal seedsmen; and there are few more beautiful ornaments to the greenhouse, from April to mid-summer, than the many varieties so obtained. We have had a number of beautiful specimens sent us in April by that distinguished amateur, Mr. Becar of Brooklyn, N. Y., which have been in bloom for two months or more. Ed.]

Some species of the Calceolaria have been cultivated for years in the English gardens, but their elevation to the dignity of a florist's flower is of comparatively recent date. Messrs. Young and Penny have the doubtful credit of making the first move in hybridizing some of opposite characters; and Mr. Groom made early progress in collecting and selling some of the most remarkable. It is most likely that the work of hybridizing, as it is called,

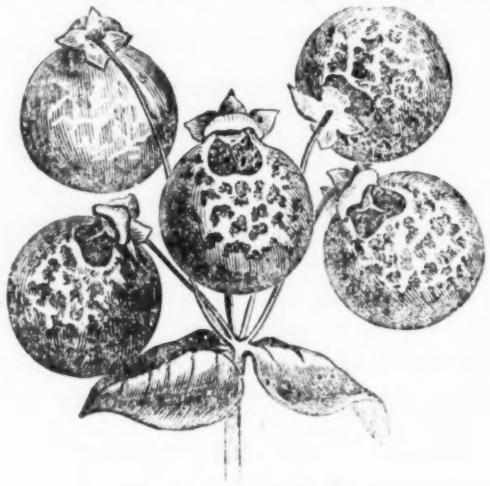


Fig. 20.—*The Calceolaria.*

was going on simultaneously in several places, for there were many very singular, and, looking as we always do at the habit of plants, we may say beautiful varieties, offered about the same period, retaining all the shrubby properties, and possessing many brilliant colours.

* From the London Horticultural Magazine.

Perhaps the worst thing that ever occurred in the progress of this plant towards perfection, was the awarding of prizes to herbaceous varieties, as well as shrubby kinds; for it induced people to grow both, and led to a degeneration of both. We have always maintained that the shrubby ones only deserve the distinction of florists' flowers; and it is now difficult to find, even among those honored with prizes, anything like a good habit of plant. The herbaceous varieties give us the largest flowers; and the captivation of size with people who do not study all the properties of plants, led too many to encourage the herbaceous kinds for that property only. Mr. Green, gardener to Sir Edmund Antrobus, was the first and most successful exhibitor of this elegant subject; and the enormous flowers on some of his herbaceous varieties, completely riveted the attention of those whose taste, or want of taste, induced them to value flowers by measure. Mr. Green, so far as our observations went, was as completely in advance with calceolarias, as Mr. Thompson of Iver was with pansies; and a spirit of emulation led others to buy his best sorts, and set to work with seedlings themselves. It is well known in the floricultural world, that our standard of excellence is a perfectly round flower, on a completely shrubby plant; and the novelties are now principally estimated by that standard, though there is much to do before it can be obtained. even should it ever be accomplished. Still, as herbaceous varieties, and the plants partaking of that habit, afford the largest blooms, it is difficult to make many judges pay sufficient attention to the superior merit of shrubby plants. The colours and the markings of the calceolaria are becoming exceedingly numerous; and, within the last two years, they have been diverted from their general characteristic in an extraordinary manner, and from speckles and blotches of all forms and sizes, they have produced blossoms with stripes like a carnation, ramifying from the hollow which is at the top, like rays from a centre, to the outer edge. The chief blemishes of these have been a dulness and indefiniteness in their colours and stripes. Nevertheless, there is no doubt, like all other subjects taken up in earnest, they will be improved; they have, too, the prevailing fault of deep notches in the outline. The herbaceous kinds are what florists technically call "miffy," a term denoting easily killed or damaged by mismanagement. The shrubby ones are more hardy and easily managed. We succeeded well for some years by the following treatment:

Soil.—The compost we used was clean hazel loam, which, when ordinarily damp, but not wet, we could squeeze into a mass, and lay it down on the potting table without breaking, but which a pressure of the finger would crumble again readily. To two parts of this, we put one of leaf mould, one of mould formed by a rotten melon bed of stable dung, and one of Wimbledon peat—this being merely lumps of half decomposed wiry fibre and sandy earth, was rubbed through a coarse sieve, such as would let horse beans through. The loam, and dung, and leaf mould were sifted through the same sieve, and the whole well amalgamated, and often turned for some time. It should be mentioned, perhaps, that all these should be measured after they have been passed through the sieve, for one of them may have, and the peat especially, a good deal left behind, which would, of course, considerably affect the proportions. This soil is not too retentive of moisture; and then requires that all plants grown in it should be very carefully watched and watered. When the soil is required for repotting large plants, or to grow them with very large shifts from small to large pots, the sieve used may be coarser, large enough in the mesh to let a marble through. Some cultivators were using at the same time, and with equal success, three instead of two parts of loam; but very much depends on the quality of the loam, which, if heavier or of a more tenacious character than we have mentioned, should be rather lessened in quantity.

Choice of Plants.—As there is no method of choosing plants equal to that of selecting those in bloom, the following points should be attended to as much as possible. First, that the plant be of shrubby habit, the stems being woody and well clothed with foliage, branching well, and forming a bushy shrub on a small scale. Secondly, that the flower stems should not rise too high above the foliage, for it would be desirable that no bare stalks should be seen between the leafy shrub and the flowers. Thirdly, that the flowers should have footstalks of such length

as to display the bloom to advantage, without being crowded or too far apart. Fourthly, that the flowers should be smooth and full, like a small distended bladder, not flattened, nor indented like a melon, perfectly round in the outline, whichever way it is viewed. Fifthly, that the colors should be bright or dense, which gives richness; that any marks or blotches should be well defined, and the ground color as good at the back as the front. Sixthly, that so far as is consistent with these points, the largest flowers should be chosen. But with regard to the roundness and freedom from indenture, so large a majority of the present varieties are deficient in these respects, that all we can do is to pick those which are the most round and least indented, and be satisfied with those that are the nearest to the standard we require. This selection should be made without regard to names or price, for, like the varieties of many other subjects, the dearest are not by any means always the best. If, however, we desire plants before they bloom, the only points we can choose are those which relate to the habit of the plant, which, if handsome when small will rarely grow worse as it increases in size. We may consult the last published authority for the best names, or take the recommendation of a respectable florist, (and we ought never to deal with any other,) for the number we require, first letting him perfectly understand the points we wish to secure. Nor must we be disappointed if the collection contain some which approach our standard at a very humble distance. The Garden Almanac for 1847 gives us a list of the best new ones:—Masterpiece, Puissant, Julia, Emperor, Oscar, Lord Hardinge, Marmion, Marquetry, Matchless, Orlando, and Plant's Carnation stripes, and there is no doubt they are the best exhibited; but some of them are mentioned for their color, some for their habits, some for their form, and some for their novelty. There are older ones which equal them, such as the Mr. Kinghorn's best half dozen, and Mr. Standish's best three or four, which may be had, as well by that distinction, as by their names. These plants, obtained early in the spring, will be best retained in their pots until their fibres reach the side; or if, on examining them, their balls are at all full of roots, they should be at once sifted.

Repotting or Shifting.—Procure pots one or two sizes larger than those the plants are in; for instance, if they are in the pots called large sixties, they may be shifted either to the size called forty-eights, or the next size, called thirty-twos. We, for the sake of their taking less room, prefer only one size larger, and should use forty-eights. Give the new pots some broken potsherds or crocks at the bottom, say an inch or inch and a half deep; then put enough compost in the pot to bring the ball even with the top of the pot without pressing. If the roots have grown about the crocks in the original pot, do not disturb them to hurt the roots; but when the ball is turned out, rub off the soil from the top surface a little, but not enough to disturb the fibres; then set it in the centre of the pot into which it is to be placed, press it down a little into the soil already there, so that the collar of the plant is just below the level of the top edge of the pot; with the hand fill up the vacancy all round, shaking it gently down by knocking the bottom of the pot down on the potting table or bench, and, if necessary, gently pressing it down at the sides, by a piece of stick of a proper thickness, not to touch the fibres which are round the outside of the ball; then, placing a little of the compost on the top, which should be about as high as the edge of the pot, finishes the operation.

The plant should be placed in a cold pit, or even a common garden frame, on a dry bottom, impervious to wet, so that the water that runs through the pots will not soak into the ground, but run off altogether; and they should be covered with the lights close for two or three days, being first watered gently, but thoroughly, to settle the earth to the roots. If the frame be like those for the culture of ordinary melons and cucumbers, only one board thick, it will be as well to heap up earth all round, like a bank, providing, however, by some means, for the running off of the superabundant water; and the greatest care must be taken to cover them from frost and cold winds, with matting or transparent cloths; for the plant, though half-hardy, will be easily damaged with frost, if in a growing state, and cannot be too carefully guarded against it, although it requires no heat. Many who have a green-house, place them on some of the shelves, in preference to growing them in pits; but, where there is so much space, there is more danger of frost, unless

artificial heat be given in hard weather; and the Calceolaria does not thrive so well, nor grow so handsome in heat; they are apt to draw, and it is the very last plant that should be at all drawn, on account of its spoiling the habit and appearance, and weakening the flower stems. It is necessary to keep them near the glass, and it is almost impossible to have them too near. Besides, plants in frames or pits are so well under the eye, and we can see so much better when they require water.

Watering and Giving Air.—Although the Calceolaria is, with care, among the easiest managed subjects, that care must not be withheld, for it is the most liable to damage by the least neglect. Too much water will damp them off quickly; too little will destroy them, or hand them over to the red spider, which almost instantaneously attacks an unhealthy plant. The compost should never become dry, and, except when the plants are growing rapidly, not too often watered; there is never, or at any rate, there is rarely, sufficient attention paid to this important operation. It is almost destructive to omit watering one hour longer than the time they ought to have it. In mild weather the lights should be taken off; and this is the time when, if the weather be dry, the moisture rapidly passes off and requires renewal. On the other hand, in cloudy or dull, though mild weather, the moisture may be retained for a long time. It should never be thought too much trouble to turn out a plant, to examine the state of the soil and the roots. The greatest danger of suffering from wet is in the winter and early spring months. The greatest danger of suffering from want of water is after the spring growth commences in earnest, and the flower stems begin their work; for the plant takes up a good deal of moisture, and the roots get near the side of the pot. If the weather be very foggy or damp, the frames are better covered up with the glasses quite close, but not darkened with mats or cloth, unless there is frost, or danger of it. The frames should not be opened in windy weather, unless the air be mild. In the spring months, if there be a genial shower, the lights may be removed, that the plants may have the benefit of it. One precaution is very necessary in the application of water; it always ought to be of fully equal temperature with the atmosphere; and, if it be not so naturally, which is seldom the case, unless it be exposed to the sun in shallow vessels, it ought to be made so by putting a little warm water into the water-pot, so as to raise the temperature a little. Water kept in a heated house would do; but there is no way so simple as to put a little heated water to the quantity you are using. Many plants suffer greatly from the chill given by pump and other cold water, when they are sending forth their young growth.

Shading.—As the warm days advance, the full power of the sun would be injurious to the plants, and rapidly dry up and heat the soil in the pots. To prevent this, a thin or transparent cloth should be used, that will not exclude the light, but yet keep off the power of the sun; as the plants however want air, the glasses should be propped up at all four corners, with blocks of wood, or bricks, or flower pots, or some other contrivance which will allow the air to pass freely over all the plants; and the shading is only to be continued in the strongest heat of the day. At morning and evening, when the power is not great, they may have the benefit of it with the glasses off, until the period when the color of the flowers begins to show, when they must be still more carefully protected against the sun.

Treatment to the Time of Blooming.—In the spring, when the plants begin to grow, the pots rapidly fill with roots, and it will be necessary to examine them, by turning out the balls of two or three occasionally, to see how far they may require shifting to larger pots, from 48s to 32s. The operation has to be performed in a manner precisely similar to that of the first shift from 60s to 48s, and they must be treated in all respects the same. In a comparatively short time even these will be filled with roots; if the plants, from their size, require one shift more, the state of the roots must be examined as before recommended, and the shifting will be just the same as well as the treatment afterwards. As the stems rise for bloom they may require support, but proper habited plants will not, unless they are drawn up. If, however, for the purpose of traveling or for exhibition, tying up becomes necessary, it should be done with very slight twigs of osier, with the bark on, and as soon as the flowers begin to swell and take their places in their bunches: the twig should reach above the flowers and be tied loosely,

for the stems would grow, and if confined, would be bent, unless the tie were loose enough to slip up with the growth. As the blooms develope themselves, it is the fashion to put the plants in a house, but shading and plenty of air must be attended to as usual, and plenty of water must be given. According to the size of the plants, so must the pots be increased in size as fast as the roots fill up the old ones; and a continuance of watering, giving air, and shading will bring them to perfection.

Seeds and Seedlings.—The plants destined for seeding should be placed together in the open ground, or in a pit which can be altogether uncovered when necessary. If it be intended to fertilize one particular kind with another, take a camel's hair pencil, to collect the dust of the one, and brush the pistil of the other with the camel's hair pencil, and the dust will stick to the female organ of the plant; but it is far better to place such as are considered good together in one place, and let them fertilize themselves. Cover them against excessive rains, because they are unfavorable to the seeding of any thing, but in an ordinary season they will seed plentifully; and all that is necessary is to place none for seed that have not any distinct characters, and very desirable ones, so that any kind of mixture may bring two good properties together in one flower, which are at the beginning in two separate ones. The seed must be gathered carefully as it approaches ripeness, and the pods be placed in a paper under cover, where it will not be prematurely laid by in a damp or unripe state. It is better to gather it before it actually turns brown, because it ripens as well for a week on the stems cut off, when once it is full grown, as it would on the plant. When once dried well, it may be sowed in pans or boxes, or large-mouthed pots, thinly and evenly, and be placed in the green-house, or in the pit, and covered with a bell glass until it comes up; providing at all times for sufficient moisture to prevent the seed from drying again after having swelled. It should also be shaded from the heat of the sun. Upon the whole, the seed, when sown, would be better in a green-house, covered however, with a hand or bell glass, and kept merely a little moistened by watering with a very fine rose or a patent syringe, for the water should fall in very fine particles like dew, as the seed would be displaced by it. When the seeds come up they should be carefully shaded, and the glass should be taken off by day, and put on again at night. A simple and effective shade is to merely cover the side of the glass next the sun with a piece of paper; it keeps off the bright and burning heat without materially affecting the light. When the plants fairly set off growing, the bell or hand glass may be removed altogether; and as soon as the plants are large enough to handle, they may be pricked out, in wide-mouthed pots, an inch apart, beginning a row close to the edge and working inwards; a pot will hold a good many plants this way. After a very gentle watering with a fine rose or syringe, they should be covered with a glass and placed within sight near the window in the green-house or in the pit; the glass must be kept over them until they have fairly established themselves, when it may be taken off, and they may grow until they pretty well touch each other. When they have become strong, and the foliage nearly covers the pot, they may be placed one each in the large 60 size pots, and be set in a frame, and after watering them, to settle the compost about their roots, they may be shut up close for a day or two; they must be now shaded from the violent heat of the sun for a while, but when they have once got hold again, and established their roots, all the care required is to see they are well and frequently watered in hot weather. They will show their habits very early, and if we were growing them we should throw away all that showed they were herbaceous, for to say the truth, we do not value them more than we should a single pink or a double polyanthus. If the pots fill with roots towards the winter time, the changing to larger ones had better be deferred to the period at which they begin to grow again, as they can hardly be kept better than at rest during the severe weather, if there be any. As the early spring approaches, they may be all shifted into 48 sized pots; or if there are more than can be conveniently grown in pots, they may be held back, or a portion of the least promising habits may be held back, to bed out or put in the borders. The treatment, in short, of the seedling plants when once they have been raised, up to the filling of the small pots, may be assimilated to that already given for other plants.

Selecting from Seedlings.—We cannot do better than refer the reader back to

the instructions for the choice of plants when in flower; for as he would pick from the stock of others for his own garden, so ought he to select from the stock of seedlings such as are worth cultivation, and throw or give all the rest away. Indeed, as the flowers come out, all that are good for nothing should be cast out the instant they are discovered, that they may not spoil the seed of the better ones by inoculation.

Treatment of Plants after bloom.—The branches should be cut back a little into form, the useless or thin wiry shoots cut out, the plants cleansed, the top surface of the compost stirred and thrown out, and a fresh top-dressing put on. They may stand in their frames, receiving pretty nearly all the weather, except the most violent of the rains and east winds, until September, when they must be deprived of more wet than is absolutely necessary, and be secured against frost. As the plants enlarge, they will require other pots, but they may enjoy a period of comparative rest from the end of October till they make a fresh move in the early spring; however, plants of good shrubby habits do not actually stop growing at all. Before they are shut up for the winter, the surface should be stirred, the loose mould shook off, and the pots filled up level; they will scarcely want watering all the winter, unless it be unusually bright and warm.

Spring Shifting.—The established plants and seedlings alike require to be removed to larger pots as soon as there are any symptoms of making new growth, that is, presuming the pots are full of fibres, or at least that these have reached the side. The sized pots in which they are to be placed must depend on the size they are removed from; from 60s to 48s, from 48s to 32s, from 32s to 24s, from 24s to 16s, and 16s to 12s, which is large enough to carry a very handsome, well-grown specimen. The mode of shifting has been described.

Cuttings.—In going over all the plants, to see that there are no useless shoots left on, many will be found that may be removed, by merely breaking them off from the base; very small ones will answer all the purposes of propagation. Those who require many will grow a few plants pretty hard after blooming, to induce shoots on purpose to take off, but any small pieces will strike readily in the ordinary compost, with a quarter of an inch of silver sand at top. The cuttings must be put in so as to touch the compost, but not to go into it, and the sand will always protect them from the air by working down close every time it is watered. They should be covered with a bell glass, that touches all around the inside of the edge of the pot; but as most cuttings strike more readily when placed close round the edge, so as to touch the pot, it is better to fill a pot with cuttings all round the edge, and to place this pot inside another, with a good inch of room all round; the bell glass resting upon the soil, which must be filled in between the two pots. The object of the glass is to exclude drafts of air, and prevent evaporation from taking place too rapidly. A slight bottom heat will facilitate the striking, but the glass must be wiped dry inside every day, and the soil kept moist, for if once the cuttings become dry, they would stand a poor chance of recovering. In a few weeks the cuttings will begin to grow, which is a pretty safe indication of their having struck, and when they have acquired some strength of root, they may be potted off carefully, one in each pot, which may be the smallest or thumb pot, or the first recognized size, small 60s. They should be closed up in a frame a day or two, and then submitted to the treatment already described for plants brought in, which, with some varieties, are rarely more than a struck cutting in the first separate pot.

The kinds to select.—A very minute description of each separate variety would have a great degree of sameness; for the variety is occasioned by the different shapes of the spots as much as anything. We therefore give a list of the sorts we should buy to begin with, and should then be content to take in addition any that appeared better in blooming time, but none that were worse:—

Lady Anne Charteris, Professor Wilson, Duchess of Sutherland, Kinghornii, Lady Blantyre, Celebration, Lady Constable, Standishii, Masterpiece, Puissant, Julia, Emperor, Oscar, Lord Hardinge, Marmion, Marquetry, Matchless, Orlando, and Plant's Carnation Stripes; which last is a singular strain, entirely run away from all the others.

The Properties of the Calceolaria.—The plant should be shrubby; the habit bushy; the wood strong; the foliage thick and dark green.

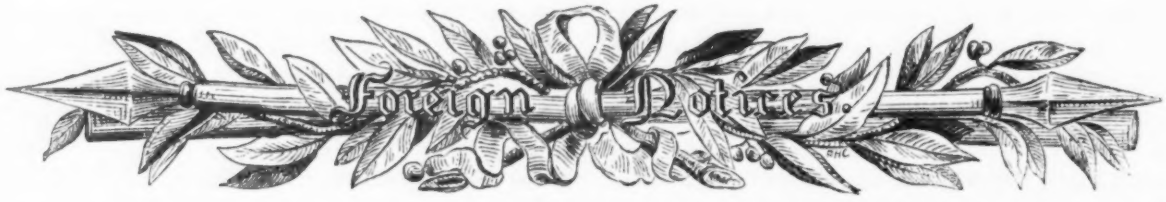
The flower-stem should be short and strong;

and the foot-stalks of the blooms classic, and branching well away from each other, to form a rich mass of flowers without crowding. The individual flower depends entirely on the form of the purse; it should be a perfect round hollow ball; the orifice and calyx cannot be too small, nor the flower too large.

The color should be very dense; whether the marking be a spot in the middle, or stripes, or blotches, it should be well defined; the ground should be all one color, whether white, straw, sulphur, yellow, or any other color

The color of a self should be brilliant, and all over of the same actual shade; dark flowers with pale edges, or clouded and indefinite colors, are bad and unfit for show.

The bloom should form one handsome bunch of pendent flowers, commencing where the foliage leaves off; the flower-stem should not be seen between the foliage and the flower, which latter should hang gracefully, and be close to each other; the branches of the flower-stems holding them so as to form a handsome spreading surface.



THE MARKET GARDENS ROUND LONDON, BY JAMES CUTHILL, FLORIST, Camberwell.—Covent Garden, the head market of this great metropolis, has long been celebrated for the finest fruits, vegetables, and flowers in the world, being different now from the time when the poor German gardener settled on a piece of land near the Monster public house, Chelsea, on the lands of the Westminster family. This man bought dung where he could find it, and put it on his ground. The landlord brought an action against him; "but," says the landlord, "as you are an industrious man, I shall forgive you if you will promise me never to poison my land any more, by putting such filthy stuff on it." The market gardeners round London from time to time have been stimulated by receiving large prices for their articles, from living in the vicinity of such wealth. It being the head-quarters of the government of this mighty empire of a hundred millions of people, can it be doubted that the most extravagant prices could be obtained in Covent Garden market? For dung the carter is allowed 2s. 6d. for a single load, and for waggons 5s. I have known many coachmen in the Mews at the west end, that were obliged to give those carters 6d., 9d., and 1s., to clear the manure away. These men have long hours; but between wages, which are from 15s. to 20s. weekly, and the buying of manure, their wages sometimes reach 30s. per week. A country person will hardly believe me when I tell him that nine cart and waggon loads of vegetables have been brought by one grower, the celebrated Messrs. Fitch, of Fulham, off their 100 acres of land, and all sold in Covent Garden by Mr. Fitch by 9 o'clock in the same morning. Those men once sent in a four-horse waggon of scarlet Ten-weeks Stock, all pulled up by the roots, and in full bloom; they were sold by 7 o'clock in the morning, and fetched 30l.; but it did not pay the expenses, and was discontinued another year.

Sixty pounds have been obtained for an acre of cabbages, and upwards of 100l. for an acre of rhubarb, and more for asparagus, 140l. for an acre of white Cos lettuce, 150l. for an acre of strawberries, &c. I have myself taken 30l. for 15 rods of ground of early potatoes in the open ground, managed as I have directed in my pamphlet: 10s. for a cucumber, and 20s. for a melon, 2s. an ounce for forced strawberries, and 25s. for forced grapes per pound. I have also taken 6s. a pound for early strawberries, in the open ground, upon early borders. The above prices seem high, but the expenses are enormous. Mr. Fitch, of Fulham, has told me that his 100 acres have some years cost him, everything included, very nearly 4000l. The above prices cannot any longer be maintained; an immense change has taken place since free trade and railroads have been introduced.

The change is fearful upon the old market gardeners—they cannot understand it. They little think how many fresh market gardens have sprung up in all directions, and along the lines of railways—land at 30s. an acre instead of 10l., labor low, railway carriage cheap, and everything else in proportion. And again, all those families that used to consume the London grown article, now have their own garden produce sent by railway. They little think, also, that railways and steamboats are continually emptying London on the Sundays, and all other times, by the tens of thou-

sands, to eat the fruits and vegetables of country gardens. That was not the case a few years back. However hard it may be for those near London who are high rented and most severely taxed, yet it is a great and decided change for the general benefit of mankind. Railroads have given one great advantage in the early spring to the London growers. Having the climate in their favor, they send a great deal of their vegetables northwards—as early potatoes, peas, French beans, cauliflowers, rhubarb, melons, cucumbers, and other finer sorts of fruits and vegetables. The foreign articles do not hurt our markets in the vegetable line, because being grown in a warmer climate, they come in long before we do, and by the time our early potatoes, cauliflowers, peas, French beans, &c., are in, the foreigners' early crop is over, or at least it would not pay them to contend against us, unless in cucumbers, and they are bad. As for Dutch melons, no one of refined taste will eat them. The foreign growers have hurt our fruit trade to an immense degree—such as apples, pears, plums, cherries, apricots, &c. As for Dutch grapes, they look beautiful, but are tough, and three seasons out of four tasteless. The middle classes in and round London cannot afford themselves strawberries more than a few times, and that only when a great crop is in full bearing. When a pottle is sold by the cultivators at 6d., the weight of which is three-quarters of a pound, the grower gets only 3d., and after paying ¾d. for the pottle, and 10l. an acre, with all other expenses, the strawberry grower is but poorly paid. Much more could be said about the market gardening of London; but the conclusion we must come to is, that it consists in continual dunging, trenching, digging, sowing, hoeing, planting, taking the produce to market, bringing home money and dung, paying for labor, taxes, and breakage. I shall not disregard skill altogether, but dung is the very fountain-head—it is the gold in a half-formed state; and from the immense profits returned, it stimulates to the use of still more manure, till at last the ground is almost a hot-bed. The crops are no sooner planted than they find their food at once, and their growth is rapid and fine. This will explain why a London gardener can get up acres of turnips where farmers fail. Rotation, no doubt, is good in all crops where the land is poor, but as I have grown potatoes these ten years upon the same ground, and every year the crop increases, I for one care little about rotation.

The market gardeners of London could bring the early produce in much sooner by forming beds, the perpendicular part facing the north, the bed sloping to the south, as I have practiced myself years ago in a stiff soil, and light, too; and with the protection of glass over these beds, as recommended in the *Gardeners' Chronicle* for peaches, apricots, and nectarines, they might almost bid defiance to the foreign grower. With the assistance of glass and the slopes together, they would certainly be equal to the gardens round Paris. Without protection of glass we can prolong fruits and vegetables out of doors without any loss, but what is most wanted is early fruits and vegetables at a cheap rate, which can only be effected by some cheap process such as has been recommended above. I am about to publish a pamphlet on twelve of the leading and most useful plants and vegetables. I have proposed an entirely new plan of growing asparagus and sea-kale, and if carried out properly, the million will partake of those most delicious vegetables which at present they never taste. *Abridged from the Maidstone Journal for the Gardeners' Chronicle.*

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Brewing at Home.—Though an admirer of teetotallers, and always recommending, when practicable, the habit of drinking cold water, still, as there are some people who cannot work without the assistance of a glass of beer, and many others who *fancy* they cannot do so, I, therefore, think neither time nor space will be wasted if I make a few remarks on "brewing at home."

I dare say such a sentence will frighten many, and they will immediately exclaim, "Brew at home, impossible! I have neither coppers, coolers, mash-tubs, nor any of the hundred-and-one articles necessary for such an operation." Never mind, do not throw obstacles in our path, but read, learn, and practice! I must, however, tell you at starting, that it will cause extra trouble to the wife; but I am very sure there are few, if any, amongst the "wives and daughters of old England" who will grudge a little exertion when once they feel that by so exerting themselves they will benefit their husbands, children, and, consequently, themselves. And now let us see wherein the benefit of brewing at home lies.

In the first place it increases your comforts, in the second place it saves time, and thirdly it saves money—three very material points; but still, more than this, it removes many temptations out of a man's path. The habit of going to a public house, if only for one glass of beer, has been the occasion of many an after pang, many a heavy heart. That constant habit of even fetching your beer from the public house must waste much time, even if not tempted to drink it in the house instead of at home. Very often a child is sent to fetch it, and thus the young mind becomes early habituated to the sound of oaths and jests which every parent ought so carefully to screen their children from hearing; for who can tell the misery which arises from early acquaintance with vice? Early impressions take deep root, whether good or evil, and our hearts being so prone to sin, the evil habit which is imbibed with our early youth is more difficult to eradicate than the good; therefore, how studiously should each parent watch over the soul's welfare of his child,

and not place him in scenes where he knows "sins abound."

I am sure, as I said before, when this is taken into consideration, trouble will not be withheld, but many will willingly try a plan which is likely to place temptation a little farther from their threshhold.

I will now tell you the articles necessary for brewing at home. Every cottage owns a large saucepan—one that holds about three gallons is a good size; this will answer the purpose of a copper. A tub will be the utensil for working the beer in; and if you cannot conveniently buy a small mash-tub, bore a hole in the bottom of a pail to allow the liquor to run slowly through. These three things are all that are really necessary; and now, as to the materials of the beer. Those who have been accustomed to drink brewer's beer will not, perhaps, at first like the pure malt and hops; their taste, however, will soon improve; or if not, they will find by adding to every two bushels of malt the following ingredients, they will obtain beer very similar to what they have always drunk:—"3lbs. sugar, boiled up once in a very little water, with one pennyworth of coriander seed, and one pennyworth of capsicum." *Malt* must be carefully chosen, the amber coloured is the best. It should not be ground, but merely crushed. *Hops* should be new; when good, they have a yellowish green colour. *Soft water* should be used, if possible, for brewing; and every article must be most scrupulously clean.

I will suppose you wish to brew six gallons of beer, and for that quantity you must have a pot which will contain four gallons of water. Have ready in your mash-tub one peck of crushed malt (be careful to have the hole in the tub stopped.) When the water nearly boils, pour it on to the malt, stir it well for ten minutes, cover the pail over with a thick sack or piece of wood, and place it by the fire for two hours. Hold the pail over the tub, draw out the peg, and let the liquor run. Stop the hole again, and add to the malt two gallons more of nearly boiling water, cover as before, and set by the fire for an hour. Put the first strained liquor into the copper or pot, and add four ounces of good hops; boil for twenty minutes; strain it into a tub; return the hops to the pot, and add the second addition of wort, which has been standing by the fire; boil this half an hour; strain and cool this as you did the first; when lukewarm mix them together, and stir in ¾ of a pint of yeast. Skim it frequently during the day, and when it has stood twenty-four hours in the tub, put it into a cask; leave the bung-hole open as long as any yeast rises, but when the fermentation is over, hammer the bung tightly in, and leave it for a week, by the end of which it will be fit for use.

One of the chief points in brewing is to attend to the proper heat the water has before it is poured on the malt. If it is too hot, it contracts the malt, and prevents the full flavor from appearing; the proper temperature is 180°, but as a thermometer is not a likely appendage to a cottage wall, the hand must be depended upon. You should just be able to draw your hand quickly through the water without experiencing pain.

There are several other methods of making beer, such as with potatoes, mangold wurtzel, and sugar, but I will reserve these for some future occasion, my present object being to tempt the cottager's wife to brew her husband's glass of beer. At the present time it will prove most economical, malt being cheap, and brewer's beer remaining at the same price. *London Cottage Gard.*

....

Working Gardens.—Resuming our observations upon the light afforded to gardening by other sciences, we will commence by observing that the benefits derived from keeping the roots of plants near the surface of the soil are more apparent in fruit trees and other perennials than in our annual crops, inasmuch as that the roots of trees being thus kept within the influence of the solar rays, always vegetate early, and ripen well their young wood. The quantity of oxygen absorbed by the roots of growing plants, is very large; being, in the instances of the radish, carrot, and others, not less than their own bulk in the course of twenty-four hours.

Digging, hoeing, and trenching, are the practices employed for facilitating the access of the air to the roots of plants, by rendering the texture of the soil loose and easily permeable.

Very few people ever consider in detail the expenditure of labor required from the garden laborer when digging. It is a labor above all others calling into exercise the muscles of the human frame; and how great is the amount of this exercise, may be estimated from the following facts:

In digging a square perch of ground in spits of the usual dimensions, (seven inches by eight inches,) the spade has to be thrust in 700 times, and as a spadeful of earth, if the spade penetrates nine inches, as it ought to do, will weigh on the average full seventeen pounds, eleven thousand nine hundred pounds of earth have to be lifted; and the customary pay for doing this is 2½d.!

As there are 160 perches or rods in an acre, in digging the latter measure of ground, the garden laborer has to cut out 112,000 spadefuls of earth, weighing in the aggregate 17,000 cwt., or 850 tons; and during the work he moves over a distance of fourteen miles. As the spade weighs between eight and nine pounds, he has to lift, in fact, during the work, half as much more weight than that above specified, or 1,278 tons.

A four-pronged fork, with the prongs twelve inches long, and the whole together forming a head eight inches wide, is a more efficient tool for digging than the common spade. It requires the exertion of less power; breaks up the soil more effectually; and does not clog even when the soil

is most wet. It is less costly than the spade, and when worn can be relaid at less expense.

The following table, showing the results of the experiments of M. Schluber, exhibits the comparative labor required in digging various soils, and the same soil in various states. Thus, if to penetrate with a spade, when dry, gray pure clay required a force represented by 100, then to penetrate an arable soil in the same state would require a force equal only to 33, or about one-third; so in a wet state the clay would adhere to the blade of the spade with a force equal to 29.2 lbs. the square foot, while the arable soil would only adhere to the same surface with the force of 6.4 lbs.

	Firmness when dry.	*Adhesion to a square foot of iron when wet.*
Siliceous sand	0	3.8 lbs.
Calcareous sand	0	4.1
Fine lime	5.0	14 3
Gypsum powder	7.3	10.7
Humus	8.7	8 8
Magnesia	11.5	5.8
Sandy clay	57.3	7.9
Loamy clay	68.8	10.6
Brick earth	83.3	17.2
Gray pure clay	100.0	27.0
Garden mould	7.6	6.4
Arable soil	33.0	5.8
Slaty marl	23.0	4.9

The preceding observations and facts are applicable to *hoeing*, an operation beneficial in consequence of loosening of the soil, as much, or more, as by its destroying weeds. Moisture abounds in the atmosphere during the hottest months, and it is absorbed and retained most abundantly by a soil which is in the most friable state. Professor Schluber found that 1000 grains of stiff clay absorbed in twenty-four hours only thirty-six grains of moisture from the air; whilst garden mould absorbed in the same time forty-five grains; and fine magnesia seventy-six grains. Then, again, pulverizing the soil enables it to better retain the moisture absorbed. This we demonstrated some years since, and the reason is, obviously, because a hard soil becomes heated by the sun's rays much more rapidly than one with a loosened texture. The latter is better permeated by the air, which is one of the worst conductors of heat. We are glad to find our opinions confirmed by so practical and intelligent a man as Mr. Barnes, gardener to Lady Rolle, at Bicton Gardens, Devonshire. He says, (Gard. Mag., Sept. 1843,) "I do not agree with those who tell us, one good weeding is worth two hoeings; I say, never weed any crop in which a hoe can be got between the plants; not so much for the sake of destroying weeds and vermin, which must necessarily be the case, if the hoeing be done well, as for increasing the porosity of the soil, to allow the water and air to penetrate freely through it. I am well convinced, by long and close practice, that oftentimes there is more benefit derived by crops from keeping them well hoed, than there is from the manure applied. Weeds or no weeds, I still keep stirring the soil; well knowing, from practice, the very beneficial effect which it has.

"*Raking* the surface fine, I have almost wholly dispensed with in every department. By hoeing with judgment and foresight, the surface can be left even, wholesome and porous; and three hoeings can be accomplished in one hoeing and raking. Much injury is done by raking the surface so very much. It is not only the means of binding and caking the surface, but it clears the stones off as well.* The earth, in its natural state, has stones, &c., to keep it open and porous, &c. If the earth be sufficiently drained, either naturally or otherwise, and the surface kept open, there is no fear of suffering either from drouth or moisture."

Exposing the soil in ridges during the winter is usually practised by gardeners for the purpose of destroying predatory vermin, but it is also beneficial by aiding the atmosphere to pervade its texture, which texture is also rendered much more friable by the frost. M. Schluber says that freezing reduces the consistency of soils most remarkably, and that in the case of clays and other adhesive soils, the diminution of this consistency amounts to at least 50 per cent. In hoeing clay, he found it reduced from sixty-nine to forty-five of the scale already stated, and in the ordinary arable soil from thirty-three to twenty. He satisfactorily explains this phenemenon, by observing that the crystals of ice pervading the entire substance of the frozen soil, necessarily separate the particles of earth, rendering their points of contact fewer.—*Cottage Gardener.* ....

Asparagus.—At page 246 of the Cottage Gardener for January, 1850, some hints are kindly given of the Dutch method of cutting asparagus by Mr Rushmere Now the manner in which I have dealt with asparagus beds, and my method of cutting for many years, are very different.

Winter Dressing.—In the first place, I never root prune the plants by throwing out deep trenches between the beds, as is too often done in very many cases; that is, by putting over the beds a good dressing of manure, then placing a line down the side of each bed and chopping off every root that has found its way into the alley. Very usually some of the best roots have thus run out into the alleys, which is not to be wondered at, for in the spring, say in the month of March, these beds in most gardens are forked over, and much of the soil and rough parts of the manure are worked back into the alleys again. This, of course, is a comfort to the poor roots that have been exposed throughout the winter to all weathers along the sides of these deep-dug alleys.

I have assisted often in the above sorts of work years ago, but for the last seventeen years I have not dug out a single trench between a bed.

When the stems are cut away in the autumn, the beds are cleaned, if weedy, and carefully forked up. A thoroughly good dressing of manure is put all over the beds equally, and when

* A finely pulverized, even surface cakes after rain much more than a surface rather rough.

this is done the alleys are forked over too; whilst, for the sake of giving the whole a neat finish, a line is put down each side of the alley, the edges made up a little, and, perhaps, a few crumbs from the alleys may be thrown upon the beds, and and the edges marked out with the point of the spade. The work is then done for the winter; and, of course, the asparagus beds neatly done in this way give the kitchen-garden a tidy appearance for the winter months.

Spring Dressing.—In the month of March these beds are again forked over carefully, the manure and soil well broken up and mixed together, and some of the rougher parts of manure, with all the rakings, are forked into the alleys after the beds are raked over nicely, and lettuces are there sown or planted in succession for the summer months.

Cutting the Produce.—Now, although I have been a cultivator of the asparagus for so many years, I have never been an eater of this much esteemed vegetable, therefore the thought did not strike me about the best way of cutting it, until one day, some seventeen years ago, when I had an abundance of heads to cut from, *all of good length above ground*, I received orders for asparagus for a dish, and for another for soup. The latter dish was to be of heads all green. I well supplied the cook with heads green enough for her dish required, and her soup too; and a first rate cook she was.

The next day, when I waited upon her for orders, we had a little talk about the green asparagus for the table, when she told me the asparagus I had brought in the day before was the best she had ever dressed for table—it was large, of good flavor, and *the whole eatable*. This was a good hint for me, for it opened my eyes greatly as to the management of the asparagus beds altogether. But the matter did not rest here, for my employer also soon found me out to praise the asparagus I was then sending him in. And thus have I continued ever since, year after year, continually receiving compliments and inquiries about it from innumerable friends of my excellent employer.

Of course, those who daily eat these kinds of vegetables, must be the best judges of their quality; and in the act of cutting the grass or young heads in this way, *taking only the part above the ground*, the operator can see what he is doing; and, however inexperienced he may be, he can cut a dish of asparagus without any loss. On the other hand, a person not used to this work, or with the usual long-handled, saw-toothed knife for cutting, wood make sad havoc among the underground shoots in cutting a dish or hundreds for the market; for when thrusting the knife into the ground to cut one head, he would probably break off two or three others unseen at the same time. This old-fashioned saw-toothed knife I have not used since I have cut my asparagus above ground —that is, level with the surface of the earth; I use just what knife I may have in my pocket at the time, and it often happens that my pen-knife is obliged to be used, from having no other about me at the moment. T. Weaver, *Gardener to the Warden of Winchester College. Cot. Gard.*

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Mexican Vegetation.—They left the stream on the following morning, and striking northerly across the country, came upon a wide expanse of luxuriant plains and woodland, glowing in all the splendor of tropical vegetation. The branches of the stately trees were gaily festooned with clustering vines of the dark purple grape, variegated convolvule, and other flowering parasites of the most brilliant dyes. The undergrowth of prickly aloe, matted with wild rose and honeysuckle, made in many places an almost impervious thicket. Amid this wilderness of sweet-smelling buds and blossoms, fluttered numerous birds of the parrot tribe, and clouds of butterflies, whose gaudy colors, no where so gorgeous as in the *terra calcente*, rivaled those of the vegetable creation; while birds of the most exquisite song, the scarlet cardinal and the marvellous mocking-bird, that comprehends in his own notes the whole music of a forest, filled the air with delicious melody. The hearts of the stern conquerors were not very sensible to the beauties of nature, but the magical charms of the scenery drew forth unbounded expressions of delight; as they wandered through this "terrestrial paradise," as they called it, they fondly compared it to the fairest regions of their own land. As they approached the Indian city, they saw abundant signs of cultivation, in the trim gardens and orchards that lined both sides of the road. They were now met by parties of either sex, who increased in numbers with every step of their progress. The women, as well as men, mingled fearlessly among the soldiers, bearing branches and wreathes of flowers, with which they decorated the neck of the general's charger, and hung a chaplet of roses about his helmet. Flowers were the delight of this people. They bestowed much care in their cultivation, in which they were well seconded by a climate of alternate heat and moisture, stimulating the soil to the spontaneous production of every form of vegetable life. *Prescott's Conquest of Mexico.*

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Acclimatizing Exotic Plants.—Let no one imagine they will successfully acclimatize an exotic plant without paying strict regard to the circumstances of the plant in its native habitat, such in part as situation, aspect, elevation of site, temperature, humidity, time of flowering, seasonal changes, &c.

These circumstances must be all more or less studied by whomsoever would successfully acclimatize exotic plants. A plant may be a native of a country warmer than our own in some degree, yet if its native situation be a moist height or shady mountain side, we should undoubtedly do

wrong in placing it in a dry, hot, sheltered situation in this country.

On the other hand, a plant may be a native of a colder country than our own, yet if its native situation be a sunny, sheltered and dry one, and its season of flowering late, it would surely be wrong and profitless cultivation in this country, to place it in a dull, damp situation; which, were we to look to the only one circumstance of its coming from a colder country, we would naturally do. Again, a plant may be, or may seem to be, from such a cool or shady native habitat, as to feel our summer sun too strong and scorching for it, and accordingly require shading from its too powerful beams; while we must not, on the strength of that circumstance, conclude that the plant will stand our winter's rigor without protection. We must first learn whether it be a native of the northern or southern hemisphere; if of the latter, that will account for its inability to withstand our summer's sun at a season when, though it be summer with us, it would be winter with the plant in its native habitat; and its nature not being changed with its situation, it is only harassed by our summer's sun at a time when it should have and strives to enjoy its winter's rest; therefore it cannot withstand our winter's rigor at the season appropriated to it by nature for its summer of excitement. Were it not for this circumstance, there is no doubt that the half-hardy Sollya Heterophylla, Billarderia Longiflora, &c., would be among our hardiest wall plants.

These are circumstances the acclimatizer must well attend to ere he plant out a single exotic; and next, and of equal importance, the soil in which the exotic is placed, be its richness or its poorness what it may, must be of an open, free, unretentive texture, and well drained. Such exotics, in general, as are natives of boggy or marshy places, can only be kept well over winter in felt-covered pits or frames, or at the bottom of ponds fed by springs. The plant must be started into a strong and rapid growth in spring and early summer, so as to have its growth completed and properly ripened before winter, when a covering of as dry and impervious a nature as possible must be laid over its roots, and around its base, or *life knot*, so as to exclude alike the frosts and the moisture of our changeable winters. If the bole or branches of such plants receive any protection, it ought to be of a nature more to exclude moisture than air, which is often useful in the severest winters. By observing these simple and easy rules, I have never found much difficulty in having stout and abundant flowering specimens, of such generally considered green-house plants as Wistaria Sinensis, Maurandya Barclayana, Jasmines of all kinds, &c.; on various aspected walls, in many and cold parts of Scotland, they do well for years, where others of a much more hardy nature, but differently treated, died during the winter these plants survived. *Annals of Horticulture.*

The Verbena.—This plant is rapidly coming into notice, not less for its use in the garden clumps, than its appearance in vases and pots. The colors are more than ever diversified, and each season adds brilliance and beauty to collections. Some persons are checking the advance, by selecting bad instead of good ones from seedlings. We have seen some of the new varieties approaching the standard pretty well, though there is much to do yet; but the color of a new sort captivates many growers sufficiently to prevent raisers from doing as they would. Those, however, who wish to advance the flower, should never select narrow petals, nor notched ones, for neither can be good, and the presence of them in a collection would spoil the seed. In choosing any for the garden, fix upon such as are very broad in the petals, in preference to any other quality, and when you have done this in each color, you will have laid the foundation for a collection; but if they are for the flower-garden alone, you have a second point to look for—you must have them dwarf, for a tall, straggling Verbena is good for nothing. *Ib.*

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Motion of the Sap.—In our last number an interesting case of Bleeding at the Root was mentioned by the Hon. James Stuart Wortley. It occurred to a large birch tree, whose roots, having been cut through, have bled so much that, although not more than 1¼ inch in diameter, a neighboring "walk has been standing in puddles, and the sap was still bubbling up through the gravel," at the date of the letter.

A similar case is mentioned by an anonymous correspondent, who says, "In lowering the ground near a large walnut tree, some years ago, some large roots were cut through; so much bleeding took place in consequence that the tree died."

A letter received from Mr. Spencer, gardener to the Marquess of Lansdowne, at Bowood, thus describes a third occurrence of the same nature: "This present spring, in forming a new walk, I had occasion to cut through three large roots belonging to an adjoining beech, and which are exposed at the present time. Some time about the middle of March I observed the roots were bleeding considerably, which has continued more or less ever since, the *flow being materially influenced by the state of the weather*. By the beginning of the present month, the bleeding was sufficient to saturate the walks completely. On examining the roots, with an ordinary microscope, I observed the discharge proceeded from the whole of the exposed cells through the section; but, from the larger diameter of the vessels towards the exterior of the root, the bleeding, as a natural consequence, was greatest at that part. I observed as well that bubbles of air frequently formed on the cut surface, evidently showing that some kind of gas was present, either in the sap or in the cells. Although in bright weather the

discharge was perfectly visible to the naked eye, the assistance of the microscope enabled me to see distinctly the *downward* passage of the sap, and that through *all* the root cells. at a time when physiologists have generally agreed it has its greatest ascending power."

No doubt such circumstances are of constant occurrence, although unobserved. What gives the cases now brought forward so striking a character, is the extraordinary extent to which in them the bleeding occurred.

When stems bleed the observer is in no way surprised; firstly, because he is accustomed to the phenomena; and secondly, because he knows that roots draw fluid out of soil, and send it *upwards*. But when roots bleed, the ordinary explanation of the phenomena is no longer applicable; for roots cannot be said to draw fluid from the soil when they are removed from the soil; nor can it be admitted that sap is sent upwards when we see that it runs downwards.

In explaining the phenomenon of root bleeding, the first step is to consider why sap ascends. This was in part demonstrated more than a century since by our countryman HALES. In discussing the question of the circulation or non-circulation of the sap, this great experimentalist uses the following words: "We see in many of the foregoing experiments, what quantities of moisture trees do daily imbibe and perspire. Now the celerity of the sap must be very great, if that quantity of moisture must, most of it, ascend to the top of the tree, then descend, and ascend again, before it is carried off by perspiration. The defect of a circulation in vegetables seems in some measure to be supplied by the much greater quantity of liquor which the vegetable takes in, than the animal, whereby its motion is accelerated; for by Experiment 1st, we find the sunflower, bulk for bulk, imbibes and perspires 17 times more fresh liquor than a man every 24 hours. Besides, nature's great aim in vegetables being only that the vegetable life be carried on and maintained, there was no occasion to give its sap the rapid motion which was necessary for the blood of animals. In animals, it is the heart which sets the blood in motion, and makes it continually circulate; but in vegetables, we can discover no other cause of the sap's motion but the strong attraction of the capillary sap vessels, assisted by the brisk undulations and vibrations caused by the sun's warmth, whereby the sap is carried up to the top of the tallest trees, and is there perspired off through the leaves; but when the surface of the tree is greatly diminished by the loss of its leaves, then also the perspiration and motion of the sap is proportionably diminished, as is plain from many of the foregoing experiments; so that the ascending velocity of the sap is principally accelerated by the plentiful perspiration of the leaves."

The sap then ascends in consequence of an attracting force exercised from above downwards by the foliage of plants. But it is evident that this is only a partial explanation of the phenomenon; for it does not account for the ascent of sap in winter when leaves are absent. In order to explain that fact we must have recourse to the action of endosmose, a force the effect of which is to produce propulsion. A tree may be assumed to be a combination of hollow tubes freely communicating with each other, and enclosed in a skin *through which fluids are capable of being absorbed* on the one hand, and expelled on the other. If we conceive a body of this kind, in which the tubes are nearly empty, to have its lower extremity plunged in water, the absorbing power of the skin at that part will begin to introduce the water into the interior, and this continuing to go on for a sufficient time the tubes must necessarily become at last filled with water rising upwards from below. To effect this no attracting force at the upper end of the cylinder was necessary; every particle of water which was absorbed by the lower end, having driven before it a corresponding volume of the water previously existing in the apparatus. Under the influence of this operation the tubes would in time become full, and if unelastic the introduction of more water would be impossible. But if such tubes and the skin that encloses them were elastic and extensible, then any such further quantity of water might be introduced as the apparatus could receive without bursting. If we then suppose that the one end of the apparatus were cut open, the sides of the tubes would collapse, and the water would be forced out till there was no more left than the tubes held in their original unstretched condition.

A tree is just such an apparatus. Its tubes are nearly empty at the fall of the leaf. During winter the roots absorb water trom the soil and fill the tubes again. By the arrival of spring they are filled almost to bursting, and then if the stem is cut it bleeds; or if the roots are cut they bleed.

Bleeding ceases as the leaves unfold; the vine, the walnut, the birch, are all as incapable of bleeding as other trees when their leaves are formed; because the leaves gradually empty the tubes, put an end to their distension, and prevent its recurrence so long as they remain in an active state.

The excessive loss of sap mentioned in the cases that have produced these remarks could not have taken place if the roots had been wounded in the summer or attumn; and if the trees survive, bleeding will cease with the appearance of leaves. It is probable, however, that it has been increased by the coldness of the spring. HALES himself was aware that sap falls back at night in consequence of the contraction of the tubes by cold; Mr. KNIGHT observed the same fact: and it has more recently been proved experimentally by M. BIOT. It may therefore be supposed that

the excessive cases of bleeding now adverted to have assumed so serious an appearance, because, in addition to the natural contraction of the tubes, the mechanical contraction produced by unusual cold has to be taken into account.

As to stopping the bleeding, it will probably be found that Mr. KNIGHT's cement will answer that purpose. The composition of this substance is as follows: To four parts by measure of scraped cheese add one part of calcined oyster shells, or any other pure calcareous earth. Blend them thoroughly, and press them with force into all the tubes and cells that are visible on the wound. The best way is to smear a layer over the surface, and to press it down gradually but forcibly with a flat board. *Prof. Lindley.*

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DESTRUCTION OF SLUGS, SNAILS, AND WIREWORMS.—Having suffered very much in my garden from the depredations of these vermin, I have been induced to try the effect of Swede turnips as a decoy for them. I had a large basketful cut up into slices rather more than half an inch in thickness, and placed about my garden (about a quarter of an acre,) and the result of 10 consecutive days' operations, is the securing of the enormous quantity of 9096, besides a great quantity of wireworms and milipedes. The second morning's collection was 2056 slugs and snails; 510 is the smallest collection I have made. The turnip slices I have been using are now put into the ground edgeways, the better to trap the wireworms, and I am employing fresh slices for a further destruction of slugs and snails. *Thomas Colley, in Gard. Chron.*

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INK FOR ZINC LABELS.—Take 1 drachm of verdigris, 1 drachm of sal ammoniac powder, and half a drachm of lamp-black, and mix them with 10 drachms of water; and this will form an indelible ink for writing on zinc.—*Gardener's Receipt Book.*

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THE SALAD GROUND NEAR ERFURT, alluded to at p. 245, as yielding a profit of £12,000 per annum, was, when I made a tour through Germany, in 1846, wholly devoted to the culture of the common Watercress (Nasturtium officinale.) We are informed by "Rhind's Vegetable Kingdom," page 300, that Watercresses were first cultivated in Europe at Erfurt; and that its cultivation is still conducted extensively there, will be readily inferred, when I mention that the markets of the greater portion of Germany derive their supply of it from this source. I visited Erfurt in February, and even at this (for central Germany,) very early season, I observed that the Watercress, in consequence of the natural warmth of the spring from whence the "Salad-ground" was irrigated, was already being collected for the markets. From the great extent of ground under Watercress cultivation at Erfurt, and from information obtained on the spot, respecting the profits derived therefrom by the proprietors, I unhesitatingly assert that the amount of revenue alluded to by Professor Ansted, though great, is far from being exaggerated, as "A. C." seems inclined to suppose. *Theodore Baubin. Chatsworth. Gard. Chronicle.*

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SEEDS OF DAHLIAS AND OTHER DOUBLE SYNGENECIOUS FLOWERS.—In saving seeds for sowing, never take them in the centre; take none but petal seeds, for they will give the largest proportion of double flowers. China Asters and Dahlias have generally some disc seeds, if they are even very double; therefore on taking the pod to get out the grains, begin from the outside, and when you have got a few of the rows of seed from them, throw the rest into a common sort, which you may give away or sell; but building upon the changes of good flowers, you will be much better paid for your labor by the few outside seeds, than you can by sowing the whole. This is worth attention.

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RAISING SEEDLING FLOWERS.—Few pursuits connected with gardening possess more real interest than the raising of seedling flowers. It is an interest which never flags, for no sooner has one "batch" done flowering than preparation is made for sowing the seed of another. Notwithstanding the improvement which art and ingenuity have effected with respect to the Calceolaria, there is still an ample field left for the employment of the amateur's leisure hours, and for the exercise of his skill. I would recommend those who intend to pursue this subject to avail themselves of the improvements already effected by hybridising, more especially as regards form and distinct colouring, and, above all, select those which are of robust habit. Cross-breeding frequently induces constitutional debility, and to save seed from weakly plants would only be perpetuating one of the greatest evils attending the raising of new Calceolarias.

When the flowers begin to expand, take two plants, for example, of distinct colours; and in order that the cross may be as perfect as possible, place them under a hand-glass, so as to prevent them from being fertilised by bees or other insects, or place them in a frame or pit by themselves, where air can be given, and with a small hair pencil distribute the pollen of the one variety carefully over the stigma of the other, and *vice versa*. In order to obtain as perfect a breed as circumstances will admit, it will be much better to breed from a few pairs in this way than to raise a miscellaneous chance mixture, because it will be a source of more interest to the amateur, and because a very small portion of seed will prove ample for his purpose.

When the seed is ripe, which will be readily known by the cracking of the capsules, let it be carefully looked after, and as soon as the whole is collected, the plants may be kept in a growing state, in order that the young shoots may lengthen 2 or 3 inches, when they may be layered precisely

as Carnations are; when perfectly rooted, let the layers be potted into 3 or 4-inch pots, in which they may be housed for the winter. The best kinds should, of course, only be propagated, as room must be reserved for the seedlings.

The seed should be sown in the beginning of October, and when just sufficiently above the soil, the young seedlings should be pricked off into 6-inch pots, as they are exceedingly apt to damp off if permitted to remain in the seed pans. These will be quite advanced enough to be potted into 4-inch pots, in which they will establish themselves before winter; I have on some occasions sown the seed as late as January, and obtained a good bloom the following summer. The seeds, which are sown in autumn in pans, instead of being baked in a hothouse or greenhouse, should be placed under a north wall; and, if the weather is wet, a hand-glass should be suspended over the pans, and provisions made to prevent slugs or other insects from attacking them.—*Gardeners' Chronicle.*

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Destruction of Ants.—I have suffered much trouble and inconvenience by being visited with these pests in my underground apartments, and I have tried many remedies, such as tobacco water, poisoned sweets, as honey, &c., but all without success. I then directed my attacks to the outside of the house. I dug a trench the whole length of the wall; I then poured a good supply of hot water into the trench, which completely saturated the earth, and might have destroyed some of my little enemies; still I do not think that leaving them at this stage would have completed the business. I procured an iron rod, and the earth being softened by the water, I forced the rod 3 or 4 feet through the bottom of the trench. and thus pierced holes all along the house, and by these means probed to the foundation. I then obtained from the gas-works a quantity of water which had been used in their purifying process. I poured this into the holes I had made, and in filling up the trench, I well wixed the gas-tar water with the mould. I soon found the numerous army was retreating. Still, for a few days, I thought I had not succeeded, as the number appeared to have increased; the colony, however, bore the appearance of confusion; the numbers afterwards daily decreased, and now I am quite rid of my foes. They consisted of the black or very dark kind of ant. *Ib.*

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Preserving Fruit.—Perhaps some of your readers may be desirous of trying the following method (which I believe to be the best yet invented) of preserving small fruits: to every quart of fruit add 6 ozs. of moist sugar, bottle in wide-mouthed bottles in the usual way; place the bottles in a cauldron of cold water over the fire; when it boils keep it boiling for 20 minutes; remove the cauldron from the fire, and cork the bottles very closely, immediately tying them over with bladder; but as this operation is not easy to perform without removing the bottles from the water, it is essential that it be done as rapidly as possible, and the bottles returned to the cauldron there to remain till the water becomes cold. Care must be taken not to expose the hot bottles to currents of cold air, nor to place them on cold surfaces, during the operation of corking, &c.; perhaps a doubled flannel, dipped in hot water, would be as good as anything else to place the bottles on. The lady from whom I received this receipt, ties her bottles down with double bladders, without corks, before placing them in the water; but I think the method I have described is preferable, as from the expansion of the contained air, by the heat in boiling, occasionally the bladders, and also the bottles. burst; and moreover the air cannot be so perfectly expelled, on which very much depends. By the usual methods of bottling much of the peculiar flavour of the green Gooseberry is lost, which by this way is preserved. I partook, two or three weeks ago, of some Gooseberries preserved in this way, in 1848, and they were perfectly good, and retained the young flavour admirably. Rhubarb cut ready for tarts, and preserved in this way, will be excellent. My informant preserves Plums, and the smaller fruits, Currants, Raspberries, Strawberries and Berberries, by placing them in a deep dish, stratified with the same proportion of sugar, and placing them in a moderate oven; when sufficiently done, she transfers them into hot jars, as quickly as possible, and secures them immediately with double bladder. *Ib.* ....

London Guano.—I visited the guano hill last week, and on my way met the Bermondsey waggon walking slowly towards town. It was the first time I had seen it walking; it appears that it does not trot until it comes near a village. As it passed me it smelt strongly of real guano, and it occurred to me that the bags must be dusted inside and out with the genuine article, in order to give the loam the "right flavour," reminding me of the practice of putting British brandy into French brandy casks. As soon as I had arrived at the steepest part of this "loam-guano hill" a post-master not far off passed a high compliment on the knowledge of an old Scotch bailiff. "Mr. J.," said he, "where can I purchase the best guano?" "Why, don't you know?—on the hill, to be sure." "There is no guano there." "Why," says Mr. J., "I see it passing every day;" and at that moment "the waggon" came by on its way to Mark-lane. A few houses and a small public-house occupy the left side of the hill; a newly made road, nearly opposite, winds round the north end, and is lost to view about 70 yards from the road, and in a few yards more the lane turns sharp round to the left into the bosom of the hill. It was of no use ma-

king any inquiry amongst the peasantry here; every one is making money out of the hill (the publican more than anybody,) and therefore they keep quiet. I peeped into the premises, which consist of a nice cottage, with two brick-built and well roofed sheds, about 30 feet long each. The bank of loam is about 15 feet deep, and although they have sent off many hundred tons they have not gone more than from 40 to 50 feet into the hill, and the same in breadth. It appears to be very solid and very dry, so that the further drying it on the hot plates occupies but little time; any one could get this loam a year ago for 3*s*. 6*d*. a single cart-load, and 7*s*. for a double cart-load, but now they do not want to see a stranger there at all. I was told that Mr. So-and-So was very poor 12 months ago, but now he is rich, and keeps his horse and chaise, many weeks obtaining 50*l*. for what costs him little in its manufacture. It is reported that he is very liberal to certain gentlemen, whose duty it is "to look about;" half-a-crown now and then makes them inform inquirers that this extraordinary stuff all goes abroad. Some is sent to a railway station about a mile off; some to Chelsea or Pimlico, some to Bermondsey, &c. I am afraid I shall be thought remiss for not seeing the works that were going on; but I remembered the story of the Highland guager and illicit still, "Did anybody see you come in?" "No." "Then (drawing his dirk) I am d—d if anybody will see you gang ut." If gardeners will continue to purchase guano of any one, except agents duly authorised by the importers, they must expect to pay through the nose for that which they have already too much of. *Dulwich, May* 20. *Ib.*

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Transmutation of Species.—To some of the readers of the Gardeners' Chronicle, who may feel interested in this marvellous doctrine, the following remarks will probably be acceptable. They are taken from a little work, by Professor Whewell, entitled "Indications of the Creator," and evidently designed as a reply to the startling views propounded some years ago in "Vestiges of the Natural History of Creation." To the questions, "In what manner do species which were not, begin to be?" and "How we are to recognise the species which were originally created distinct?" Dr. Whewell observes, "the most remarkable point in the attempts to answer these and the like is the controversy between the advocates and opponents of the doctrine of the transmutation of species. This question is, even from its physiological import, one of great interest; and the interest is much enhanced by our geological researches, which again bring the question before us in a startling form, and on a gigantic scale. We shall, therefore, briefly state the point at issue. We see that animals and plants may, by the influence of breeding, and of external agents operating upon their constitution, be greatly modified, so as to give rise to varieties and races different from what before existed. How different, for instance, is one kind and breed of dog from another! The question then is, whether organised beings can by the mere working of external causes, pass from one type of one species to that of another? Whether the ourang-outang may, by the power of external circumstances be brought within the circle of the human species? And the dilemma in which we are placed is this: that if species are not thus interchangeable, we must suppose the fluctuations of which each species is capable, and which are apparently indefinite, to be bounded by rigorous limits; whereas, if we allow such a transmutation of species, we abandon that belief in the adaptation of the structure of every creature to its destined mode of being, which not only most persons would give up with repugnance, but which has constantly and irresistibly impressed itself on the minds of the best naturalists as the true view of the order of the world. The question of the limited or unlimited extent of the modifications of animals and plants has received full and careful consideration from eminent physiologists; and in their opinions we find an indisputable preponderance to that decision which rejects the transmutation of species, and which accepts the former side of the dilemma; namely, that the changes of which each species is susceptible, though difficult to define in words, are limited in fact. It may be considered, then, as determined by the overbalance of physiological authority, that there is a capacity in all species to accommodate themselves, to a certain extent, to a change of external circumstances; this extent varying greatly according to the species. There may thus arise changes of appearance or structure, and some of these changes are transmissible to the offspring; but the mutations thus superinduced are governed by constant laws, and confined within certain limits. Indefinite divergence from the original type is not possible, and the extreme limit of possible variation may usually be reached in a short period of time; in short, species have a real existence in nature, and a transmutation from one to another does not exist." *Ib.*

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Moral Influence of Gardening.—If there were any doubt as to the influence of gardening on the minds and general habits of the working classes, the simple fact, that the clergy of all denominations are foremost in the ranks of its patrons and promoters, should convince us of its beneficial tendency; but a transitory glance at the inmates of a cottage where the garden is neatly cultivated, is enough to show that the concomitants of industry—comfort and prudence—reign over the affairs of the place. In a work, which we hardly recollect the subject of, there was almost a sermon comprised in a single sentence. It is strongly impressed on our memory, and is pertinent to the matter here. The author says:—"Gardening

is the most rational of all recreations. It teaches forethought, industry, and economy of time. It exerts the mind, invigorates the frame, and constantly reminds us of the great God whose hand is imprinted on every leaf, and who, in his bountiful goodness, rewards us with the fruits of the earth. To teach the cottager to manage his garden, is to lead him to happiness. To induce the higher classes to love flowers, is to find them innocent gratification, and provide employment for thousands." There is truth in every word of this. "Gardening is the most rational of all recreations." It is healthful, and every hour expended in it as an occupation is rewarded by the effect of it on the crops. The industry bestowed on a garden is always profitable, and the profit sweetens labour. It is a sorry thing to contemplate the hours that are wasted by the laboring classes in those places where there are no gardens, and it is scarcely to be helped. What is a man to do when he leaves his work? It is not to be supposed that he can sit down quietly for hours; yet what can he occupy his mind with? He may while away some of the time with reading; but reading, notwithstanding cheap literature, is expensive. He seeks in society the amusement which he cannot find alone, and society can only be found at the public house; then there is a double evil, because, besides the waste of precious hours, there is a necessary expenditure; or, perhaps, he resorts to the skittle-ground, the bagatelle table, or other gambling amusements, in which case the loss to his family is far more serious. Man is a social animal, and unless he has occupation, he gets into mischief. It is almost certain that a man without a garden goes to the public house; and he cannot do so without spending money, which would be useful on his children's back, or in the purchase of household comforts. Many an industrious man, unused to tippling, has been totally ruined by his leisure; and it is much to be regretted that there are no means of profitably employing the interval between business and bed time. If a man has his garden, he blends amusement with labour, and profit with both. Gardening teaches forethought, because all the operations are performed with a view to the future. We sow because we desire to reap. We plan all our affairs with regard to some ulterior, not a present result; and this gives us a habit of thinking and of calculation. A piece of ground is no sooner cleared of its crop than we begin to consider what is the best thing to occupy it with, and how soon it will be vacant again. Gardening exalts the mind; of this fact there can be no doubt. Every leaf and flower proclaims the wisdom and goodness of the Almighty. The man who can watch the progress of vegetation, and the effects of the seasons, without being impressed with a proper notion of his Maker's bounty, must be insensible to everything. Gardening invigorates the frame. There is hardly an exercise so healthful; the whole body is in motion in the different operations. The digging, hoeing and weeding, keep all the muscles in play; and it is admitted by all, that the smell of the newly turned earth is congenial to health; a fact proved also by the longevity and hearty lives of the agricultural labourers. The man who loves his garden, wants no other amusement, and instead of wasting his substance in the very natural pursuit of occupation for his mind among companions similarly situated, he finds every shilling in his pocket, and the economy of his household greatly assisted by the crops in his garden; independently of which, there is downright enjoyment, in every sense of the word, from the time the ground is dug to the period of reaping the fruit. The clergy have seen this, and are, therefore, warm patrons of the science. They have seen, with great satisfaction, that to give a man a garden is to give him profitable occupation for his leisure hours, and keep him out of mischief; and they have always been foremost in the promotion of Horticultural Societies and allotments of land to the poor. It is gratifying to see the change that has been made in whole towns and villages by the establishment of Horticultural Societies and the encouragement of cottage gardening. It is also incredible to witness the improvement that a few allotments have made, and it is much to be regretted that there are not means taken to increase the number of gardens—for there are very few things contribute so much to the changing of idlers and drunkards into useful members of society, as the means they afford of profitably engaging their leisure time. *Hort. Mag.*

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Plants and Gardens of the English at Shanghae in China.—The gardens of the English residents in Shanghae far excel those of the Chinese in the number of species of trees and shrubs they contain, and also in the neat and tasteful manner in which they are laid out and arranged In 1845 only one or two small English houses had been built, and no gardens had been formed; but now a large English town has risen on the banks of the river, and almost every house is surrounded by a garden.

The late Mr. Hetherington was the first to attempt rearing vegetables on a large scale. He introduced Asparagus, which now succeeds admirably at Shanghae, Rhubarb, Seakale, and all the vegetables common in English gardens. He also raised the Strawberry from some seeds I sent him in 1846; but, curious enough, although it grows luxuriantly, it scarcely bears any fruit. The blossoms appear to go blind soon after they expand. I have no doubt, however, that some method will soon be devised to overcome this habit, and I ex-

pect to see Strawberries produced in great abundance and in perfection in Shanghae. The ground about the town is too low and wet for the growth of the Potato, and hence no one has succeeded in rearing what would be called a good crop of this desirable vegetable. In the course of time, however, when the cultivation is attempted in the higher parts of the country, we may expect to get better Potatoes here than at Macao, although the latter are usually most excellent.* Mr. Hetherington fell a victim to a fever of a very fatal kind, which prevailed in the autumn of 1848. He was a true specimen of the old English gentleman, and was deeply regretted by all who had the pleasure of knowing him.

The English Consul, Mr. Alcock, has also a good vegetable garden on the grounds attached to the consulate. There is a noble plant of the Glycine sinensis in this garden, which flowers most profusely, and becomes covered with its long legumes or pea-like fruit, which it ripens to perfection.

The two first ornamental gardens are those of Mr. Beale and the Messrs. Mackenzie. Mr. Beale's house—a fine square building of two stories—is placed in the centre of the garden. In front is a fine grass lawn, which extends from the house to the boundary wall near the river. Behind the house there is another lawn surrounded with a dwarf ornamental wall. A wide gravel walk leading from the entrance to the back part of the garden divides the house from the business part of the premises. This garden is rich in plants indigenous to China, and also contains many which have been introduced from other parts of the world. On entering the gate the first thing which stikes a botanist is a fine specimen of the new Funebral Cypress nearly six feet high, and just beginning to show its beautiful weeping habit. This has been obtained from the interior, and does not grow in the neighborhood of Shanghae. Mr. Beale intends to plant another specimen on the opposite side of the gate, and when the two grow up, a very striking and pretty effect will be produced. In the same border there are fine specimens of Weigela rosea, Forsythia viridissima, Chimonanthus, Moutans, Lagerstrœmias, Roses, &c., and nearly all the new plants sent home to the Horticultural Society from 1843 to 1846. In this part of the garden there is also a nice plant of the new Berberis japonica, lately obtained from the interior and described in my last letter.

The American Magnolia grandiflora has been introduced here, and promises to be a very ornamental tree; its fine green leaves and noble flowers are much admired by the northern Chinese. Several plants of Cryptomeria japonica are succeeding admirably, and will soon be much more beautiful than any the Chinese have in this part of the country. The garden has been raised with a large quantity of fresh soil considerably above the level of the surrounding ground, so that all the family of the Pines succeed much better than in those places where they are usually planted by the Chinese; besides the latter generally spoil all their trees belonging to this family by lopping off the lower branches for firewood.

Large quantities of the Olea fragrans—the Qui Wha of the Chinese—are planted in different parts of the garden. These succeed much better here than in the south of China. In the autumn when they are in bloom, the air is perfumed with the most delicious fragrance. Another most fragrant plant is the new Gardenia (G. Fortuniana,) now common in English gardens, to which it was introduced by the Horticultutal Society in 1845. In Mr. Beale's garden many of the bushes of this charming species are 10 or 12 feet in circumference, and in the season are covered with large double white flowers, as large as a white Camellia, and highly fragrant. Altogether this is a most interesting garden, and promises to be to Shanghae what the well-known one of Mr. Beale's father was to Macao.

The Messrs. Mackenzie's garden here is also well worthy of notice. It resembles some of the neat suburban residences near London. The shrubs are arranged with great taste in groups and single specimens on the lawn, and consist of all the species and varieties common in this part of China. The collection of Azaleas is particularly fine. During the summer time, when these plants are in bloom, they are placed on a stage, and protected from the sun and rain. They flower in great profusion; the individual flowers are larger, and the colours are more brilliant than they are at home. Here, too, are gorgeous specimens of the new Viburnums (V. plicatum and V. macrocephalum) sent home to Chiswick in 1845. The first English Apple tree fruited in this garden about a year ago.

The gentlemen connected with the London Missionary Society have a village of their own about a quarter of a mile back from the English town. Each house has a nice garden in front of it, full of interesting Chinese shrubs and trees. Dr. Lockhart has the finest collection.

These short statements are sufficient to show your readers what has been done since the last Chinese war. Chinese plants have not only been introduced to Europe and America, to enliven and beautify our parks and gardens, but we have also enriched those of the Celestial Empire with the productions of the west. Nothing, I believe, can give the Chinese a higher idea of our civilization and attainments than our love for flowers, or tend more to create a kindly feeling between us and them. *R. Fortune, in Gard. Chronicle.*

* I have made a great many inquiries about the Potato disease in China, but it does not seem to have made its appearance. The Macao Potatoes have always been good and sound. *R. F.*

American Pomological Congress.—In conformity with the Resolutions passed at the last session of this National Institution, its next meeting will be held in the city of Cincinnati, Ohio, on the 11th, 12th, and 13th days of September next, A. D. 1850.

The Ohio State Board of Agriculture, and the Cincinnati Horticultural Society will also hold their Annual Exhibitions at the same time and place, and the latter has generously offered to provide for the accommodation of the Congress.

All *Agricultural*, *Horticultural*, *Pomological*, and *kindred societies* in the United States and the Canadas, are hereby respectfully invited to send such number of Delegates as they may deem expedient.

In order to facilitate the objects of the Association, to promote Pomology and the sciences upon which it depends, to collect and diffuse a knowledge of researches and discoveries in this important department, delegates are requested to bring with them specimens of the fruits of their respective districts, with lists of the same, and also papers descriptive of their art of cultivation, of diseases and insects injurious to vegetation, of remedies for the same, and whatever will add to the interest and utility of the Convention.

Packages of Fruit not accompanied by its proprietor, may be addressed to the care of Messrs. John F. Dair & Co. Lower Market Street, Cincinnati, O. These should be very distinctly marked "For the American Pomological Congre s."

All Societies to be represented in this Congress, will please forward certificates of the election of their several Delegations, to J. B. Russell, Esq., Corresponding Secretary of the Cincinnati Horticultural Society. Delegates will also report themselves at the Burnet House, on the morning of the 11th, where a Committee will be in attendance to take charge of their Fruits, and from whence the Congress will proceed to the Hall assigned for its meetings. Marshall P. Wilder, *President*. S. B. Parsons, P. Barry, and George W. Deacon, *Secretaries*. July 4, 1850.

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Vineries.—I last fall constructed a small house as a cold vinery, and wish to inquire whether there are any advantages in whitewashing the inside of the glass? I have noticed that with some green-houses this is done in summer. I am induced to make the inquiry as my vines seem to suffer from the heat of a bright sun. I wish also to inquire of whom I can procure the Diana grape for fall transplanting. *C. P. Williams. Albany, 3d July*, 1850.

No ordinary amount of light or sun will injure a grape vine, provided there is moisture and food enough at the roots and ventilation enough above the leaves. Your vines probably suffer from the want of one or the other of these needful things. The Diana grape will no doubt be advertised by various nurserymen this fall. Ed.

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Strawberries, &c.—*Sir:* I am a constant reader of the Horticulturist, and have been highly gratified with it from the beginning. The subject which is my favorite, is the strawberry, which I have made a matter of study. I have fruited about ten varieties in my garden this summer, and some of them fully equalled my expectations. Among the best are "British Queen," (I think the genuine,) Hovey's Seedling, Burr's New Pine, Black Prince, Burr's Rival Hudson, and Columbus. *All things considered*, I prefer Myatt's British Queen. It is equal in beauty and flavor with Hovey's Seedling or Boston Pine, and more hardy, and I think rather *more prolific* than H.'s Seedling. In your "Fruits and F. Trees," you are fearful that the British Queen will prove tender. I do not find it so; but I cover them with coarse manure or forest leaves in early winter. Strawberries in general suffer nothing in winter, except by alternate thawing and freezing in March, by which the roots are loosened and laid bare. I am not a dealer in plants, and what few will set in my margin are spoken for. I obtained a half dozen (B. Queen) two years ago in September, of Dr. Voorhies, of New Rochelle. I think your correspondent in Poughkeepsie may get some from him, who told me he had them of W. R. Prince, and has cultivated them three or four years. By the way, I happened to be lingering in New-York, in October last, and took a trip to Flushing,

for pastime. I asked the gardener to show me Myatt's B. Queen. He looked over the grounds and could find none. He then went to the catalogue, and found it marked in a way which signified that it was discarded. I inquired why? He said it was not prolific. Mr. Thomas, in the F. Culturist, also puts it *below par*. I do not hold it thus. If not the *best*, it is a *good bearer*. It is worth while, however, to pass along in fruit time, and if some plants be found without fruit, to pull them out forthwith; that no runners may put out to mock our future expectations. This species needs as good cultivation as Hovey's Seedling or any other. Of the New Pine, I think the plants we get from Rochester are genuine; they have blossoms truly pistillate. Some of my neighbors will have only one variety in the same bed, but I think differently. The strawberry family are "Socialists," and if not "Red Republicans," some of them are *very red*.

One of our citizens, Capt. D., has a plantation which has attracted much attention, and raised the "strawberry fever" unusually high; six or seven such will compete with it next year. He had eight varieties, and among these the Black Prince and Boston Pine excelled. They were in all respects excellent. The New Pine also recommended itself, and promises to be a *very early* variety. The Scarlet is scarcely early enough to fertilize the blossoms of the Pine.

I have observed what you say of the pear, Frederick de Wurtemburg, in your "Fruits and F. Trees," that "the stock seems to be stunted." Two years ago in April, I bought a three year old tree of Mr. Verplanck, our nurseryman. The first year it remained stationary, or nearly so; the second, it grew about one inch in the several limbs which are, I think, only four in number. But this year two limbs have put forth twenty inches. It now bears fine, beautiful pears. Three were stung by the curculio; I immediately put in the point of my knife, and poured in whitewash, and I suppose the insect was killed. My plums are almost all gone. I fought against the insect with lime and musqueto netting, but in vain. The enemy is more formidable than I was aware of; and now, as I have amused myself in this desultory sketch, I will trouble you no farther. I can prepare nothing of much practical utility for the public eye, but am happy to say that Horticulture is a favorite amusement with some of us in Geneva. *A. Messer. Geneva, (Ont. co.,) July* 12, 1850.

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Albany and Rensselaer Horticultural Society.—At the meeting of this society on the 10th of July, there was a good exhibition of cherries, raspberries, currants and gooseberries.

Cherries.—The premium for the best variety, was awarded to E. C. Aiken, of Greenbush, for Black Tartarian; for the best *two* varieties, to Dr. A. March, Albany, for Black Tartarian and Tradescant's Black Heart; for the best and most extensive collection, to Henry Vail, Troy; second best to Dr. Herman Wendell, Albany.

Gooseberries.—For the best and finest flavored variety, the premium was awarded to Henry Vail, for Compton's Sheba Queen; also to the same for the second best variety, Lady of the Manor; for the best and most extensive collection, to James Wilson, Albany, who showed thirty-three varieties.

Raspberries —For the best and finest flavored variety, premium to Henry Vail, for the Fastolf; for the second best to John S. Goold, Albany, Red Antwerp; for the best and most extensive collection, to Henry Vail.

Currants.—For the best and finest flavored variety, premium awarded to James Wilson, for Knight's Sweet Red; for the second best to Henry Vail, for the White Grape; for the best and most extensive collection, premium to Henry Vail.

A handsome display of plants and flowers was made by Messrs. D. T. Vail, Troy, Newcomb, of Pittstown, Douw, of Greenbush, and Messrs. Wilson, Wendell, Goold, McIntosh, Corning, Dingwall and others, of Albany.

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Oswego Hort. Society.—I send you by this mail, a paper giving a partial view of the doings of our infant Horticultural Society in this city. We received about $100 for fruits, bouquets and Floral Designs, donated to the society by the contributors, and $40 at the door, from those not members—$140. This is a pretty fair beginning in a city excelling all others in *flour*, and but few heretofore in flowers, or "the flower of commodities." Our present number of members is near three hundred. Respectfully yours, *J. W. P. Allen, Cor. Sec. of Oswego H. Society. July* 13, 1850.

The paper alluded to in the above has not come to hand.

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Seedling Peaches.—The enclosed slip I cut from the Cleveland Democrat, and forward it to you for the purpose of inquiring whether it be true that one sort of peaches, say the Early York for instance, can be so managed as to ripen from August to November, as stated in the slip. I doubt the statement, but, if true, would be glad to have it confirmed by your experience—an answer in the Horticulturist, to which I am a subscriber from its commencement will oblige, *Lewis Handerson. Cleveland, June* 10, 1850.

A correspondent of the Cultivator, Mr. Craighead, of Whitehall, in Cumberland county, Pennsylvania, gives the following account of his success in raising seedling peeches, both early

and late, of some known and favorite varieties: "Seven years ago, I went to Mr. Conklin's extensive peach orchard about the 20th September, and bought two bushels on purpose to get the seeds. We sought the very best we could find; his early peaches were nearly gone; I took the last on the trees. That brought the ripening of them to the period I picked the peaches off 20 days later. The Columbia was just beginning to ripen. I got the first ripe. That brought them two weeks earlier than the original. I planted the stones in rows, like planting potatoes, only covered shallow, following nature as near as I could. All brought the same sort in color and appearance. The result is, I have the Morris White through the season; the Columbia and Early York also, so that the whole space is now filled with the same species from last of August to 20th October, and any farmer, if he has one superior peach tree, can raise seedlings from it, and change to early and late, to last the whole season. But plant the stones when fresh, if you expect to raise a good tree, for if they become dry, you will get a poor peach, something resembling the original, but worthless. My seedlings, cut of about 500 trees, which I planted seven years ago, contain only about four trees that are not as good, and many much better than the original."

Remarks.--This story is told in a liberal way, and though there are instances in new soils of a large proportion of seedlings proving excellent, the result is usually the other way, *i. e.* 4 fine sorts to 456 indifferent ones. It is quite true that by saving the seeds of the earliest or latest fruits, the probability of obtaining early or late varieties is rendered almost a certainty. This, indeed, is the method so successfully pursued by originators of new early vegetables. Ed.

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British Queen Strawberry.—To "B., Poughkeepsie."—We have the "British Queen" Strawberry. Price $2 per hundred plants, packed and forwarded from New-York in the manner directed. *Winter & Co. Flushing, L. I., July* 15, 1850.

Myatt's British Queen Strawberry.—We have a small bed of the above named from which we should be glad to furnish "B." or any other person, good runners at $1 per dozen.

This is the largest berry we raise, some single specimens having measured *seven* inches in circumference. Its flavor is very fine, in the opinion of many persons far surpassing that of any other.

But it is a *very shy* bearer, six being about the average number of berries on a hill. It is also very tender and most of the rnnners die in the winter, even with the best protection.

We cultivate it by the side of twenty-five other varieties, and think we give it a fair trial. *Bissell & Hooker. Rochester, N. Y.*

Sale of Short-Horns—We earnestly hope that our country gentlemen who wish to embellish their farms, parks, or lawns with beautiful cattle and sheep, will direct their attention to the splendid animals belonging to Mr. Sheafe, at High Cliff, near New-Hamburgh, Dutchess county, which are to be sold on Thursday, the 29th of this month (August.) As ornaments to the grounds of a mansion, nothing can add more beauty, grace, or value than fine animals; and without them, such grounds are incomplete in all these requisites.

Mr. Sheafe himself is an amateur in farming, and stock-breeding, and has spared neither pains nor expense to obtain a fine stock; and intending to spend a few years in Europe, where he now is, offers his stock for sale. No better opportunity will soon be presented for either country gentlemen or practical farmers to obtain fine Short-horn cattle, or South-down Sheep than is here opened.

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Burr's New Pine Stawberry.—As the lovers of good fruits are all interested in having the new kinds which are highly recommended, tested as to their flavor, productiveness, and good qualities for gneral cultivation, I will give you the results of my experience in the cultivation of *Burr's New Pine Strawberry*, for the last two seasons, in the latitude of Hartford, Conn. I had but a few plants in April 1849, but by taking special care, they produced plants sufficient to make a large bed in 1850. They have been remarkably productive, generally averaging fifteen strawberries to each fruit stalk, and of large size, though not so large as Hovey's seedling. In flavor they were delicious, and decidedly superior to any Strawberry I have ever cultivated, though I have eighteen or twenty different kinds of the choicest. My plants were covered during the winter with a little straw, not because I deemed it necessary, but to be on the safe side, and none of them were injured by the cold. *A Connecticut Subscriber.*

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Striped Bugs on Melons, Cucumbers, &c.—I hear great complaints of the destruction of vines by the striped bug, and have frequently suffered in the same way, and have tried numerous methods recommended from different sources, but the only *effectual remedy under all circumstances*, is the following—Take 4 pieces of boards about 2 feet long and 7 to 10 in width, nail the ends together and put around the hill of vines, and no striped bug will ever be found inside (if not there when the box is put on.) Three or four short boards put around the hill and kept there with wooden pins will answer the purpose equally well. This season the bugs had destroyed more than half my vines before I put my boxes on. I then planted the vacant hills inside the boxes; not a bug came on the vines after that, until I supposed the young vines (last planted) were strong enough

to defy the bug, when I removed the boxes, and they were immediately attacked again, and I was obliged to replace the boxes. I have tried this for several years, and can safely recommend it as a perfect protection.

In this section onions are suffering from maggots or a small white worm that is found in the bulb of the young onion which destroys them. We have been troubled in this way for the last three years. Can any of your subscribers tell us of a remedy. *John W. Bailey. Plattsburgh, July 11th*, 1850.

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The Storm of July 5th.—The atmosphere gave but slight indications of rain until five o'clock P. M., when a dark cloud arose slowly from the N. W., attended with thunder. After rising something like 30°, the progress of this cloud seemed to be to the north and east, until it spread over the northern sky to about 20° of the zenith. In this position, and at about 8 o'clock, it began to appear somewhat broken by seams, running from east to west and from N. W. to S. E. During the time this cloud was gathering, and extending itself over the northern sky, another rose in the west, and for a while passed south, mainly hanging south and west. From this cloud brilliant sheets of lightning were issuing, and passing southwesterly from 7¾ o'clock until the clouds united at ½ past nine, while, during the interval, occasional chains of the fluid, with almost frightful glare, passed off in the same direction.

At eight o'clock, it was evident that these two clouds were making a proximity, and their union, it was presaged, would result in a powerful storm. As they approached, the voice of the thunder was less frequent than when the clouds first issued from their birthplace in the western sky; but the lightning in the north, like that in the south, was vivid and grand beyond our description. Broad sheets following each other from east to west, in so rapid succession as to keep the sky and the earth illuminated, with an occasional chain,—glowing with the heat of a furnace,—describing the serpent's crooked path, and spitting fire in its rapid descent, passed off to the north of the valley, as if to vent its spite on the rugged hills that surround it.

A few minutes after nine, a breeze sprung up from the northwest, which brought the clouds to a speedy union. And as the nuptials of the storm were celebrating in mid-heaven, the lamps which had illuminated the pathway of the moving clouds, one after another rapidly went out, and then, the thunder spake the nuptial ceremony with sublime and fearful voice, rolling in its majesty from south to north through the whole extent of the thickly veiled canopy. Alternate flashes preceded each impressive sentence, with light so brilliant that, at one moment, every object of earth, within range of vision, was as visible as though the full glare of the noonday sun-beam fell upon them, and the next they were shrouded in darkness so deep that no mortal eye could penetrate it. The wind had passed away, and all was settled into the calm of a summer evening now, when these fire-works of the skies, which threw so contemptibly into the shade all efforts of imitation which human invention had designed, and human industry executed only one brief day before, to the astonishment and admiration of wondering multitudes, were giving their most noble and impressive afterpieces. Ah, how frail is man, in his most mighty creations, and how deficient is art, in her most noble triumphs, when placed in comparison with nature, drawn out by nature's God! The evening previous, thousands had left their quiet homes, to mingle in the inconveniences of the crowd, to see the short lived rocket shoot through the air, and witness other feats of art, both beautiful and brilliant. But who saw these illuminate the mountain, spread out the landscape in all the perfection of noonday, and reveal the colour of the sleeping flower, as nature did when the storm was hanging over it? And what was that cannon's booming, momentary voice, compared with the hoarse angry roar of the thunder, as it went bellowing through the sky? Yet, of the thousands who went away to witness the one, how few saw anything but gloom, and sadness, and fear in the other, while in the safety and quiet of their own homes. Oh, how long will the propensities of mortals be such that the inferior, dear-bought, and far fetched, will be preferred to the sublime, the beautiful, and home-born, that lie strewn around their every-day paths!

But to the storm. As may be supposed, so dark a cloud, and so much lightning, and considerable thunder, could not pass away without some rain. When we saw the two clouds approaching each other, and making a gathering point over us, we anticipated a deluge. Nor in this were we mistaken. It began to rain slightly about 9 o'clock, but soon ceased, to commence in earnest at half past ten, and continue until four the next morning—the most of the time falling in torrents, which deluged the fields, raised the streams to overflowing, and washed the roads to an extent which has not been before witnessed for years; and all this without much effect in cooling or purifying the atmosphere. Yours truly, *W. Bacon. Richmond, Mass., July*, 1850.

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A Visit to the Country Seat of J. W. Whitney, Esq.—His country establishment is situated three miles north of the city of Rochester, on the Rochester and Charlotte plank road, leading to Lake Ontario and the mouth of the Genesee river.

It was the season for cherries and strawberries, and we found rich collections of both, including all the newest varieties. Mr W. has turned his attention to the cultivation of fruits on an extensive scale. His peach orchard covers many acres. The trees appear luxuriant and fruitful. He has

all the popular sorts, which ripen in succession. His apple orchards are, likewise, extensive. One young orchard, planted from root-grafted and budded trees, principally of excellent keeping sorts. A second orchard,—an old one, headed down, and top-grafted with such sorts as the Melon, Spy, Bourassa, St. Lawrence, Early and Late Strawberry, Yellow Bellflower, Ribston Pippin, Pomme Gris, Fameuse, &c.—all promising magnificent heads, having been last year judiciously pruned, which put them at once into fruit-bearing spurs.

The collection of pears here is of rare and choice sorts, and the trees are making a thrifty, short-jointed growth, which is the shield against blight, canker, or cracked bark. The soil would be by some nurserymen considered too light for the well doing of this delicious fruit; still there is no indication of a want of those elements, which constitute a good pear soil.

The large share of attention devoted to fruits here, occasions no neglect of the ornamental grounds; for the collection is enriched with every new and fine tree, plant, and shrub, as soon as it can be pronounced to be an acquisition. We found here the following specimens: Cedrus Libanii, Cedrus deodara, Abies excelsa, Abies americana alba, Abies americana nigra, Picea balsamea, Pinus sylvestris, Pinus pinaster, Thuya occidentalis, Juniperus virginiana, Paulownia imperialis, Salisburia aidentifolia, Magnolia macrophyllum, Taxus hibernicus, Taxus boccata, and many others too numerous to mention, besides a large collection of choice shrubs, herbaceous plants, Hyacinths and Tulips.

Mr. W. has commenced making Pyrus japonica and English Yew hedges, and has the finest specimen of a privet hedge I have seen, running the whole length of the avenue leading to his gardener's cottage. It is cut square on top, and is four feet high, two feet broad, and a perfect mass of lively green the whole season. *C. J. Ryan. Greece, Monroe county, July* 3, 1850.

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Chester County (Pa.) Hort. Society.—Pursuant to previous notice, the Chester County Horticultural Society held in its Hall, in West Chester, Pa., on the 14th and 15th days of June, a general exhibition of Horticultural productions, in connection with Manufactures, the Mechanic Arts, the Fine Arts, Fancy Work, &c.

The Hall of the Society was not as extensively decorated as it is at the autumnal exhibitions; yet there were sufficient floral ornaments, independent of specimens deposited, to render its appearance highly interesting.

The pyramids of flowers, the moss-covered vases, and baskets crowned with the richest treasures that Flora at this season dispenses with so liberal a hand, the sweet scented bouquets for the hand and the mantle, and the rich, rare and interesting collection of roses, Calceolarias, Torenias, Fuschias, and other ornamental plants of the garden and hot house, skilfully arranged along the tables that extended the length of the Hall, presented a most interesting and agreeable appearance to the eye, and loaded the air with a balmy fragrance.

The backwardness of the season prevented a very extensive exhibition of fruits and vegetables, yet on the tables were displayed some beautiful specimens of strawberries, cherries, grapes, peaches, nectarines, potatoes, peas, onions, beets and gooseberries, most of them grown in the open air, though some of them were the productions of the hot-house.

The committee regret to say that the manufacturers and mechanics of the county did not exhibit as great an interest in displaying the products of their skill and ingenuity as was desirable, yet such of them as did deposit specimens in the exhibition, sent them of materials and workmanship of the most creditable kind. In this department the diplay of a lage assortment of carpets, of rich and beautiful patterns and excellent texture, was the most striking feature; and we are sure there were few present who had any idea that Chester county could produce an article so excellent in every essential quality as was to be found in the article alluded to. The coach and harness work, the agricultural implements, the marble work and other articles showed a high degree of skill and taste, and we are glad to learn that the exhibition was the means of bringing these branches of industry so prominently and favorably to the notice of our citizens, that several sales were made and orders given to the artificers for more of the products of their workmanship.

We have little doubt this branch will be properly represented at the next exhibition of the kind the society may hold.

The committee were well pleased to see a great many productions in the Fine Arts, embroidery, worsted work and fancy work, the fruits of the leisure hours of the artists who executed them. To the ladies, the exhibition is indebted for its chief charms. Their taste and skill contributed most of the Floral designs, and their contributions in silk, worsted, embroidery, paper flowers, &c., &c., added greatly to the interest of the occasion.

The lounges, chairs, ottomans, foot-stools, lamp screens, fire screens, table covers, coverlids, counterpanes, knitting, netting and other similar articles, wrought by their patience and industry, were beautiful in design, rich in coloring, and arranged and executed with great neatness and propriety, and to their liberal deposits in this department may be attributed a large share of the enjoyment realized by the visitors.

The committee also take pleasure in alluding here to a bust moddled in clay, one of the first attempts of a young gentleman of this county, that displays the presence of a rare talent in that most elevated and most difficult walk of the Fine Arts, and which only requires cultivation to render its possessor distinguished amongst the artists of the land.

A beautiful jet from the fountain in the centre of the Hall, falling into and overflowing its urn, served to keep the atmosphere of the room at a pleasant temperature, and the gentle music of the falling waters, mingled with sweet airs from some fine pianos, and the lively notes of several cage birds, served to add to the interest of the whole. *Report of Com. of Pub.*

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The Prairie Rose—Rosa rubifolia.—This rose in its native state, grows wild over the whole western country, being very luxuriant in its growth, and covering the prairies, particularly in Ohio, Illinois, Indiana, Michigan, &c. &c. In Maryland, Pennsylvania and the western States, in fact wherever it is indigenious, it is known by the name of the Prairie Rose, and why it should be called Michigan Rose more than Ohio or Indiana Rose, I cannot see the propriety. Knowing the history of the double varieties of this rose, perhaps it may not be unacceptable at this time to your readers. Mrs. Hannah Levering of Baltimore, Md., having removed to Lancaster, Ohio, forwarded seeds of the wild Prairie Rose to Mr. Samuel Feast, an eminent florist of Baltimore, who planted the same, and after they had vegetated, permitted a few to climb over a bed of Noisette roses. The blossoms of the Prairie became (many of them) impregnated from the pollen of the Noisettes. The seeds from the Prairie roses were carefully gathered and planted, and from the many seedlings, the following new varieties were produced, all fine double roses:

1. Beauty or Queen of Prairies.—Large beautiful deep pink, very double, exquisite form, frequently with a white stripe. This is the so called Double Michigan, prevalent in your city.

2. Perpetual Pink.—Pink, changing to purple, very double, flowers several times during the season, large clusters.

3. Baltimore Belle.—Blooming in large clusters, full double, light blush, with a deeper centre. This rose possesses a valuable character, different from the other two, being as fragrant as a Tea rose. These are all vigorous climbers.

Since the above have been produced, Mr. Joshua Pierce, of Washington city, D. C., procured a number of seeds of the single Prairie rose, and planted them with reference to a hedge, a portion of them growing contiguous to a number of rose bushes of the old Maidens' Blush, and running over them. Seeds of these were again taken and planted, and from many hundreds, he had the pleasure of sending out the following beautiful double climbing roses, of the same character as the three above described, raised by Mr. Feast, and vying with them in beauty, some even excelling them, and a number of them being quite fragrant:

1. Pride of Washington.—Very dark rose, very fine form, cupped, full double, resembling Jane, blooms in clusters of about 20 flowers, habit vigorous and good.

2. Anna Maria.—Pink with rosy centre, cupped, and full double, beautiful large clusters 20 to 30 flowers, quite distinct from any of the others.

3. Eva Corrinne.—Flowers large, very delicate blush, with beautiful carmine or rose centre, globular and very double, clusters medium size from 10 to 20 flowers, rather compact, foliage medium, habit vigorous and very erect. This is the most delicate of all the Prairie roses, and its clusters of blush flowers, with their deep centre, which are perfectly globular and *quite fragrant*, entitle it to a prominent place in every garden. It blooms quite late.

4. Miss Gunnell.—Elegant delicate blush or buff, full double, clusters large, from 25 to 30, foliage large, habit vigorous, one of the very best, quite unique for the delicate tint of its flowers.

5. Ranunculiflora.—Pale blush, very handsome, full double clusters large, 25 to 30 flowers, slightly fragrant, and blooms rather late.

6. Virginia Lass.—Splendid blush, in large clusters, full double.

7. Mrs. Hovey.—Splendid white, very double and beautiful, large clusters, the only double white Prairie rose: the flowers of this variety are larger than all the rest, and decidedly the best of the 12 seedlings; it is of supurb habit, with splendid deep green foliage, and as it is a pure white, it is the greatest acquisition which yet has been made to the double Prairies.

8. Jane.—Flowers medium size, of a beautiful lilac rose, imbricated and very double, clusters large and compact, 25 to 30 flowers, habit strong and vigorous.

9. President.—Blush with rosette in the middle, compact, and very double, 15 to 20 in a cluster—habit vigorous and good. This is the latest flowering variety.

10. Triumphant.—Deep brilliant rose, imbricated, very double and fine, clusters large, 20 to 30 flowers, foliage large and handsome, bright green, deeply and sharply serrated. This variety is remarkable for its ample and beautiful foliage, as well as its deep and brilliant rosy flowers.

11. Linnæan Hill Beauty.—Pale blush, very fine indeed, much admired—clusters large and full double.

12. Mrs. Pierce.—Not yet bloomed for us, and therefore cannot describe it. These 12 are Mr. Pierce's seedlings, and all very handsome. We have fine specimens of all on our grounds, and can exhibit small bushes only 2 feet high, and 2 ft. wide, with 36 clusters of roses, some numbering as high as 40 in a cluster.

To the above list of Double Prairies, may be added, the Kentucky Multiflora—it is of the same character, and a great climber—blooms very late—full double, and in large clusters. Flowers splendid deep rose.

Thus, Mr. Editor, you will perceive there are double prairie roses of almost every hue; and who would not possess themselves of such rare beauties. We have procured these roses at great expense, and will offer all the above for sale this fall and next spring.

The active partner will take much pleasure in showing any of the above or other varieties of roses or plants to all persons wishing to examine them. He can at all times be found upon the grounds, or at his residence nearly opposite that of V. W. Smith, Esq.

While writing on running roses, perhaps I may as well describe a new double yellow fragrant climbing rose, of which we are the proprietors, and which we think of letting go out next spring. This is a new seedling. In its character of growth, it resembles the double Michigan, putting up shoots from 18 to 20 feet in a season. The foliage is of the largest size and deepest green—the flowers pure yellow, and uncommonly large, and no tea rose can exceed it in fragrance. Chromatella and Solfaterre in their growing habits will bear no comparison—neither will Lamarque, and the flowers of each of the above are much lighter in colour, as well as much smaller. Neither Chromatella, nor Solfaterre possess any fragrance—nor does Lamarque comparatively speaking. We consider this rose the greatest acquisition of all the new running roses, and it is the only one of this robust, fragrant character, on record, either in America or Europe. *A. Fahnestock. Syracuse Journal.*

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Dr. Kirktland's Seedling Cherries.—Mention has several times been made in our columns of a number of new and valuable cherries produced from seed within a few years past by Dr. Kirtland of Cleveland, and in our paper of Nov. 1, 1847, descriptions are given [from the Horticulturist] of seven of the most promising of these seedlings. Since that time several others have been fairly tested, and found valuable, but no description of them has yet been published.

Besides the large number of seedlings—some forty or more—Dr. K. has a large collection of the approved known and named kinds, so that his collection of cherries, now in bearing, probably exceeds that of any individual in the West, and is not excelled by many in the eastern States. It is proper to remark, that his soil is quite sandy, with a mixture of shade and gravel, which seems to be highly favorable for this fruit, and it is not prebable that the varieties would produce as much and as good fruit if removed to a clayey or otherwise unfavorable soil.

At the time of our visit the past month we find the early cherries all in find eating condition; among these are three of the seedlings described in 1847, to wit: Rockport Biggarreau, Doctor and Cleveland Biggerreau. The Rockport was not quite as large or well flavored this year, as usual, we were informed, [and in fact this might be said of nearly all cherries, owing we suppose to the drouth,] but it was very fine. The trees of Doctor and Cleveland Biggarreau were completely loaded down with the rich tempting fruits. The former tho' small or medium in size is very sweet and rich; the latter very closely resembles the Yellow Spanish, except in its earlier maturity, and perhaps being more productive. "Kirtlands's Mary," "Ohio Beauty," and "Elliott's Favorite" were not ripe, but their appearance was exceedingly fine, especially of "Kirtland's Mary."

Among the numbers of seedlings which have not been named or described as yet, we noted "No. 10," a beautiful light red yellow cherry, of large size, very sweet and high flavour; and we were imagining. how pleasant it would be to have a large tree in full bearing, that we might gather and eat at our leisure, when the Doctor drew us along, tasting of one and another, until we came to a black cherry, "No. 4." This is a splendid fruit for gardens or orchards; it is nearly as large as the Black Tartarian, with similar outward appearance, but the flesh is more firm and perhaps a little richer. From this we passed to "No. K." a seedling much resembling the Early White Heart, but ripening a few days later. "No. 31" is a black cherry of medium size, good but not yet of size and quality to commend; this is its first year of bearing, and it will probably improve. "No. 52," is a fruit above medium size, of a fine, clear, redor amber yellow mottled with red, as grown in sun or shade, of a waxany, glossy character, flesh slightly tinged with red, tender and juicy, first year's fruiting, promises fine. "No. B. B." is a cherry of medium size, somewhat resembling the American Amber, very sweet, juicy and good flavor; this also fruited for the first time this year, and was not quite ripe when we saw it. "No. N." is a cherry much resembling Black Eagle, but ripens earlier, and we should judge, would prove valuable. "No. 30;" this was fully ripe, and for a small tree and its first fruits, we think it promises much. It is a black cherry, something like Knight's Early Black, juicy, sweet and rich, and ripening with the Early White Heart. "No. A.A." promisedto be a fine black cherry; it was not ripe, and so we might say of many more of which the Doctor with his wonted courtesy called our attention, but getting tired, we put up our note book, with merely adding, that we never saw a tree more abundantly loaded than was the Late Biggareau, but as the fruit was only about half ripe, we could say nothing of it. As we were wending our way towards the house, the Doctor called our attention again, and directed us to a seedling tree near his house, the fruit of which

was unripe, but which had fruit two seasons previous, and proved so fine that he had propagated it, and Mr. Elliott had named it "Delicate."

Mr. Elliott being almost daily examining these cherries, with the Doctor by his side, and making his notes, the public may safely count upon having introduced to their notice only such as are really deserving.

We will only add that the cherry known about Columbus as the "German May Duke," has been decided by Dr. Kirtland, and also by Mr. Downing, we believe, to be identical with the "Early Purple Guigne" of the books and foreign catalogues. It is one of the very best cherries known, but it is said to be rather hard to propagate. *Ohio Cult.*

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Effects of Moisture on Fruits.—Lieut. Maury, of the National Observatory, Washington City, has made a valuable communication to the *Southern Planter*, on the subject—"How the National Observatory is subserving the interests of the Farmer as well as the Mariner"—from which we take the following:

My investigations show—always supposing the soil be *there*—that cotton, sugar, coffee, rice and tobacco and indigo, with spices, drugs and balsams of infinite variety and great value may be grown from the mouth of the Amazon all the way up to the base of the Andes—and they point to the valley of that river and its tributaries as one of prodigious capacities—of productive capacities as far exceeding those of our great and greatly boasted Mississippi valley, as this exceeds that of the Hudson. The valley of the Amazon is rich, wide and fruitful beyond measure.

These investigations also indicate what, upon inquiry I learn is the case: that there is a wet and dry side to the Alleghany Mountains,—that in some parts of the range, the eastern, and in others the western side is the dry side. Good grapes, I am sure, will grow on these dry sides, and it is probable that they would make good wines.

We know how powerfully the presence of abundant moisture in the atmosphere affects the flavor of our delicate fruits; at certain stages of the crop a few days of rainy weather will destroy the flavor of the strawberry, the peach, etc.; and we know that the grape requires sunshine and dry air to perfect its secretions.

The finest grapes in the world are grown in the valley of the Caspian sea, where Humboldt tells us the air is so pure that the most finely polished steel may be exposed in the open air for days and days without having its lustre tarnished. This is but another expression for a low dew-point, or a dry atmosphere. There the evaporation and precipitation, as in our valley of the great Salt Lake, are exactly equal.

Though there may be here and there under the mountains of Georgia, the Carolinas, Virginia, Tennessee, &c., small districts adapted to the production of wine, these charts "of the winds and currents of the sea," indicate that there is on this continent a large district, the climate—for I know nothing of soils—of which is admirably adapted to the culture of the grape. That climate is in Northwestern Texas and the regions thereabouts.

I may be excused from mentioning another discovery with regard to the culture of the peach and other fruits to which I have been led by some experiments with the thermometer on a fleece of wool.

I procured a bit of tanned sheep skin with the wool on, placed it with the woolly side up, in a bucket as though I intended it for a hen's nest; I then put a thermometer in it with the bulb in the bottom of the nest; and set it out in the open air.

This thermometer, of certain clear nights in August, when the thermometer on the outside of the nest and also in the open air stood at 75°, and when that in the nest during the day had ranged as high as 150°, was found to stand at 42°.

This explained to me the reason of our finding in the low lands and bottoms the earliest signs of frosts in autumn, and the latest in spring.

These are the places therefore which in clear weather, when radiation is active, are the hottest in the day and the coolest in the night. And if you plant the peach there, they will force its blossoms in the day, and nip them with their frosts at night.

Now, on the hill tops and sides, the weather is cooler in the day, and warmer in the night when radiation is active—consequently the hill tops and sides will not force the buds so soon, nor make frost, nor kill the fruit when the bottoms will; and therefore the hill tops and sides, not the bottoms, are the places for orchards.

There is a ridge about Washington upon which the peaches seldom fail, when failure is common to orchards planted a short distance from it on either side.

Travelling last summer through the beautiful valley of Wyoming, I noticed near Wilkesbarre, that with fine mountain ridges close at hand, the apple orchards were all in the river bottoms—the worst possible place for them—and on inquiry was told—what I knew would be said without asking—that it was a poor fruit country.

The best fruit-growing height for each district must be determined by actual experiment; and I have no doubt if the farmers of Wyoming valley would cut down their fruit trees in the river bottoms, and plant an orchard reaching from near the base to the top of the surrounding hills, they would discover the best apple growing elevation; and planting orchards at that pitch, they would probably be rewarded with fine fruit.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting for July occurred on Tuesday evening, 16th instant, in the Chinese Saloon. Dr. Wm. D. Brinckle in the chair.

The display on this occasion was unusually rich in fruits—grapes especially; one large table being entirely covered with dishes containing that fruit alone—a most tempting sight. The contributors were, Judge Kane's gardener, who presented four very large bunches of Black Hamburg; Thomas O'Brien, gardener at Eden Hall, six bunches of Black Hamburg, three of Red Chasselas, three of Sweet Water, three of White Chasselas, and three of White Frontignan; Frederick Wolf, gardener to S. W. Gambes, Montgomery county, three of Malaga, and three of Chasselas—very large; Ben Daniels, gardener to the president, three bunches of Black Hamburg, and three of Reine de Nice; James Dundas' gardener, three of Black Hamburg. Among the other fruits might be noticed remarkably large and fine flavored Moorpark apricots, from Laurence Shuster's garden; and excellent specimens of the same variety from Mr. Dundas' garden; also a large dish of good fruit from David Cook's Norristown grounds. Mrs. John B. Smith exhibited apricots, pears, and two kinds of gooseberries. James Bisset, gardener to James Dundas, presented a dish of very handsome Red Roman nectarines; Jacob Shedaker, fine Miser or Mirabelle plum; Rob't Buist, pears of the Madeleine and Doyenne d'Ete varieties; John Perkins, of Moorestown, N. J., apples—the Yellow Harvest, Yellow Juneating, and Woolman's Early Harvest; A. W. Roe, of Woodbury, N. J., Bough apples, and Morello cherries; Dr. Brinckle, seedling raspberries, of the President Cope and Orange varieties.

Of plants, there were five collections. In Peter McKenzie's, there were, worthy of note, nine new and most beautiful Fuchsias, Torenia asiatica, and Verbenas. In Mr. Dundas', five Achimenes grandiflora, ten Fuchsias in variety, Campanula nobilis, very fine specimen of Hydrangea japonica, Lilium lancefolium, Oncidium papilio, and other air plants. Among those from C. Cope's garden, four Stephanotis floribundus, Vermica Lindleyana, Cacti in variety, and Fuchsias. In John Lambert's were Pentas carnea, Cuphea platycentra, Calceolarias and Fuchsias; and in Jno. Sherwood's were six choice Fuchsias, Justicia carnea, Double flowering Myrtle, six Verbenas, &c. &c. The designs and bouquets were handsome. Among the vegetables there were many well grown specimens, by Anthony Felten, Maurice Finn, gardener to John Lambert, and Ben Daniels, gardener to our president.

Premiums were awarded as follows:

At the intermediate meeting, July 2d. By the committee on plants and flowers. Picotees—for the best six varieties, to Ben Daniels, gardener to Caleb Cope. Seedling Picotee—for the best American, to J. J. Jennings. The committee noted a display of Seedling Phloxes and Petunias, by Tho. Meehan, gardener.

By the committee on fruits. Currants—for the best 2 quarts red, and for the best 2 quarts of white, to John. J. Jennings; for the best black, to Maurice Finn, gardener to John Lambert. Gooseberries—for the best quart, to Ben Daniels—for the Amber; for the second best, to Jno. J. Jennings. The committee were much gratified with specimens of seedling raspberries, grown hy Dr. Brinckle, consisting of eight varieties of much merit.

On the present occasion, by the committee on plants and flowers. Cacti—for the best six plants in bloom, in pots, to Ben Daniels, gardener to Caleb Cope. Lilies—for the best two specimens in bloom, to Wm. Burnley, foreman to Jno. Sherwood. Hot-house plants—for the best grown three varieties, and for the second best ditto, to James Bisset, gardener to Jas. Dundas. Green-house plants—for the best grown and finest flowered, to James Bisset; for the second best ditto, to Ben Daniels. Plants in pots—for the best and most interesting collection, to Maurice Finn, gardener to John Lambert; for the second best, to James Bisset; for the third best, to Wm. Burnley. Design of cut flowers—for the second best, to Ben Daniels. Basket of cut flowers—for the best, to Maurice Finn; for the second best ditto, to Ben Daniels. Basket of indigenous flowers, to Robert Kilvington. And a special premium to Mrs. Dr. Coleman, of Pemberton, N. J., of one dollar, for a beautiful basket of indigenous plants.

By the committee on fruits. Grapes—for the best three bunches of a black variety—Black Hamburg—to Tho. S. Blair, gardener to Judge Kane; for the second best ditto—Black Hamburg—to Tho. O'Brien, gardener at Eden Hall; for the best of a white variety—Malaga—to Frederick Wolf, gardener to S. W. Gambes, Montgomery county; for the second best—Reine de Nice—to Ben Daniels. Apricots—for the best twelve specimens—the Moorpark—to John A. Gochring, gardener to L. Shuster, Spring Garden; for the second best—the Moorpark—to James Bisset. Nectarines—for the best six specimens—Red Roman—to James Bisset. Pears—for the best—the Madeleine—to Isaac B. Baxter; for the second best—the English Jargonelle. Apples—for the best—the Yellow Harvest—for the second best—the Yellow Juneating—to John Perkins. Plums—for the best—the Miser or Mirabelle—to Jacob Shedaker. And special premiums—for Morello cherries, one dollar, to A. W. Roe, Woodbury, N. J. For one quart of gooseberries—the Whitesmith—one dollar, to Mr. J. B. Smith; also to Ben Daniels of two dollars, for Black Hamburg grapes, and another of two Dollars for White Chasselas, to Tho. O'Brien. The committee would also notice a few specimens of very fine seedling gooseberries, exhibited by Dr. Brinckle, and raised by him of the Orange and President Cope varieties. They also mention that Isaac B. Baxter exhibited, *ad interim*, very fine gooseberries; some measuring three inches in circumference.

By the committee on vegetables. For the best display by a commercial gardener, to Anthony Felten; for the best display by an amateur, to Maurice Finn; and for the second best, to Ben Daniels.

The treasurer reported his semi-annual statement of accounts.

The amendment to the by-laws proposed at last meeting was adopted, by which the whole of the committees will be appointed in February; and the existing committees will continue until successors are appointed.

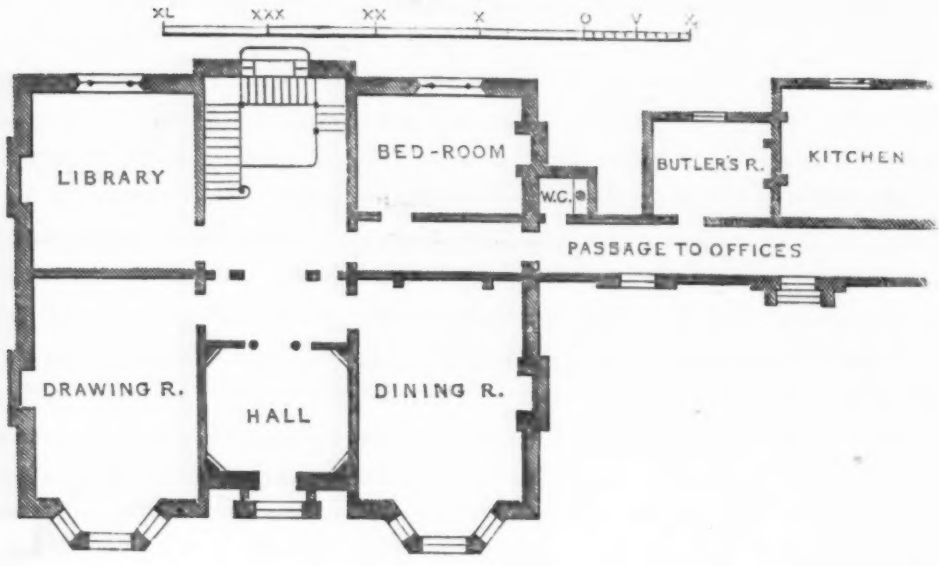
An interesting communication from corresponding member, Dr. J. A. Kennicott, on horticultural subjects, was read.

The premium schedules of the Delaware Hort. Society, the New-Haven Co. Society, and Chester Co. Society, were reported as being received.

Members Elected.—Joseph T. Johns, Michael Magee, and Charles Harbert. Adjourned.

THO. P. JAMES,
Recording Secretary.

TUDOR SUBURBAN RESIDENCE.



PRINCIPAL FLOOR.